Accounting and Business Research
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/rabr20

Earnings management or forecast guidance to meet analyst expectations?

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Published online: 04 Jan 2011.

Earnings management or forecast guidance to meet analyst expectations?

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Abstract—We examine whether UK firms engage in earnings management or forecast guidance to ensure that their reported earnings meet analyst earnings expectations. We explore two earnings management mechanisms: (a) positive abnormal working capital accruals; and (b) classification shifting of core expenses to non-recurring items. We find no evidence of a positive association between income-increasing, abnormal working capital accruals and the probability of meeting analyst forecasts. Instead we find evidence consistent with a subset of larger firms shifting small core expenses to other non-recurring items to just hit analyst expectations with core earnings. We also find that the probability of meeting analyst expectations increases with downward-guided forecasts. Overall our results suggest that UK firms are more likely to engage in earnings forecast guidance or, for a subset of larger firms, in classification shifting rather than in accruals management to avoid negative earnings surprises.

Keywords: meeting analyst expectations, abnormal accruals, earnings forecast guidance, classification shifting

1. Introduction

Survey-based evidence in the US (Graham et al., 2005) and the UK (Choi et al., 2006) shows that meeting analyst expectations is a fundamental earnings target. Severe stock market reactions to negative earnings surprises and a market reward to positive earnings surprises give managers strong incentives to walk down analyst earnings forecasts in order to increase the probability of hitting the final forecast (earnings forecast guidance) or to use their discretion over reported earnings to meet expectations (earnings management). In this paper, we examine whether UK firms use earnings management or forecast guidance to meet analyst expectations. In addition to the practice of accruals management, we examine a recently explored earnings management mechanism: inflating core earnings through classification shifting of core expenses to income-increasing (negative), non-recurring items. As both managers and analysts exclude non-recurring items from core earnings, firms may engage in classification shifting of recurring losses or expenses to inflate core earnings and meet analyst expectations. Examining the practice of classification shifting by UK firms is of special interest, as over our study period FRS 3 *Reporting Financial Performance*, which was in force for UK firms from 1993 until the adoption of International Financial Reporting Standards in 2005, required firms to report net income per share, but allowed them to distinguish between core and transitory earnings by exercising discretion in classifying non-recurring items. In line with FRS 3's approach, IAS 1 *Presentation of Financial Statements* requires a clear distinction between core and exceptional income components, allowing firms to disclose material items of an exceptional nature separately in the income statement.

Prior evidence does not explore fully the link between the UK regulatory framework for reporting financial performance and the mechanisms UK firms use to meet expectations. In their survey of investment professionals and financial managers, Choi et al. (2006) report a consensus view that the general quality of earnings improved post-FRS 3 and that, while earnings forecast guidance might be a widespread phenomenon, firms are now less likely to use discretionary accounting choices to meet analyst expectations. At the same time, the survey reveals concern over the potential manipulation of non-recurring items despite the increased transparency requirements of FRS 3. The evidence of Choi et al. (2005) that a substantial proportion of the 500 largest UK listed non-financial firms (over 70%) exploited the option to disclose alternative earnings per share (EPS) on core earnings supports this concern. Athanasakou et al. (2007) lend further support to this concern by documenting an overall increase in the practice of income

*Vasiliki Athanasakou is at the London School of Economics and Norman C. Strong and Martin Walker are at Manchester Business School. They gratefully acknowledge the comments of two anonymous reviewers, Ken Peasnell and Steven Young (Lancaster University), Andrew Stark (Manchester Business School), Krishna Kumar (The George Washington University), the conference participants at the AAA 2006 Annual Meeting (August, 2006), the EAA 29th Annual Congress (March 2006), the Hellenic Finance and Accounting Association 4th Annual Conference (December, 2005), and the seminar participants at the Athens University of Economics and Business (Accounting and Finance Group 2005 Seminar Series).

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This paper was accepted for publication in September 2008.

smoothing using classifications of non-recurring items post-FRS 3. Even though Peasnell et al. (2000a) and Gore et al. (2007) provide preliminary evidence consistent with UK firms using non-recurring items pre-FRS 3 to hit earnings benchmarks, they do not find similar evidence for the post-FRS 3 period. Therefore, to date there is no direct evidence on whether UK firms use classifications of non-recurring items post-FRS 3 to hit analyst forecasts.

In view of this discussion, we undertake an archive-based examination of the use of accruals management, classification shifting and earnings forecast guidance to meet analyst expectations in the post-FRS 3 period, 1994–2002. We constrain our sample period to 2002 due to data unavailability for key variables in our study post-2002. We use logistic analysis to examine the association of income-increasing, discretionary accruals and downward-guided forecasts with the probability of meeting analyst forecasts. As a proxy for discretionary accruals, we use abnormal working capital accruals (AWCAs) estimated using the modified Jones model including lagged return on assets (ROA) to control for operating performance (Kothari et al., 2005). Consistent with prior research (Burgstahler and Dichev, 1997; Dechow et al., 2000; Peasnell et al., 2000a; Das and Zhang, 2003), we focus on working capital accruals instead of total accruals, as changes in working capital offer a more flexible mechanism to meet earnings benchmarks than non-current accruals (e.g. depreciation, amortisation, impairments). We measure earnings forecast guidance by comparing an estimate of the expected analyst forecast (Matsumoto, 2002) with the last forecast for the year made before the release of the earnings announcement. Our findings show no evidence that firms use income-increasing AWCAs to meet analyst forecasts. Instead, we find a significant association between earnings forecast guidance and the probability of hitting the target. The relation persists after controlling for other incentives.

To examine whether UK managers shift core expenses to non-recurring items to meet analyst expectations we test the association between an estimate of unexpected core earnings (McVay, 2006) and non-recurring items, focusing on cases where classifications of non-recurring items allow managers to just hit analyst forecasts. We decompose total non-recurring items into non-operating exceptional items and other non-recurring items (i.e. operating exceptionals and other value-irrelevant items). We further distinguish between small and large non-recurring items. Other and small non-recurring items provide more latitude for classification shifting because they are less visible and less likely to depend on the occurrence of specific events (e.g. structural events such as mergers, acquisitions, restructurings and divestitures). Our results show a significant association between unexpected core profits and small income-increasing other non-recurring items for larger firms that would have just missed the analyst forecast without these classifications. For these firms, comprising around 10% of the sample,[1] the unexpected rise in core earnings appears to reverse in the subsequent accounting period when small core expenses recur, causing a decline in profitability. Additional analysis shows that while for the entire sample there is no association between non-recurring items and future operating performance, small other non-recurring items predict substantial operating cash outflows three years ahead for firms that just hit the analyst target with these classifications. Taken together, this evidence is consistent with a subset of larger UK firms engaging in classification shifting of small core expenses to other non-recurring items to meet analyst forecasts.

Our study provides information for accounting standard setters and contributes to the earnings management literature in several ways. First, we shed light on the earnings game in the UK by providing insights into the mechanisms UK firms use to meet analyst expectations and their incentives (e.g. relating to other earnings benchmarks, the value-relevance of earnings, litigation risk, growth and size). We find that post-FRS 3 UK firms did not use abnormal working capital accruals to meet analyst expectations. This corroborates survey evidence of Graham et al. (2005) and Choi et al. (2006) that managers are generally less likely to employ discretionary accounting adjustments to hit analyst forecasts. Also, using a proxy that captures both formal guidance (e.g. public disclosures) and informal guidance (e.g. through private conversations), we show that UK firms guide analyst forecasts down to meet analyst expectations. This evidence is consistent with the views of investment professionals and financial managers that earnings forecast guidance is a widespread practice in the UK (Choi et al., 2006).

Second, this is the first study to explicitly examine the possibility that UK firms shifted core expenses to non-recurring items post-FRS 3 to increase core earnings and hit the final forecast. McVay (2006) examines classification shifting by US firms using special items. Our evidence shows that even though classification shifting is not a common practice, managers of some larger firms may shift small core expenses to operating exceptional and other non-recurring items to inflate core earnings and hit the final forecast. This evidence justifies concerns over potential misclassifications

[1] These are 121 large firms with average total assets of £1,043m, average total sales of £1,426m and average market capitalisation of £1,576m.

of non-recurring items to meet earnings targets, despite the increased transparency requirements of FRS 3.

Third, our study adds to recent research examining adjusted earnings reporting in the UK (Walker and Louvari, 2003; Choi et al., 2005; Choi et al., 2007). Over the entire sample we find no association between non-recurring items and future operating performance. Consistent with prior evidence, these results suggest that, on average, UK firms classify transitory income components below core earnings. The only evidence consistent with misclassified non-recurring items relates to the subset of larger firms that would have just missed the final forecast without classifications of small other non-recurring items.

2. Prior research

2.1. US evidence

In their survey of US chief financial officers, Graham et al. (2005) find that analyst expectations and prior earnings are managers' two most important earnings benchmarks. Strong stock market reactions to small negative earnings surprises suggest that investors view a missed target as signalling a substantial decline in underlying performance. Conversely, investors view a zero or positive earnings surprise as evidence of a well-managed firm, able to both predict and deliver future earnings. Archival research corroborates this evidence. Skinner and Sloan (2002) and Brown (2003) document adverse market reactions for firms that just fail to meet expectations. Bartov et al. (2002) and Kasznik and McNichols (2002) find that firms that meet analyst expectations earn a market reward that is positively associated with future performance. Doyle et al. (2006) show that this market reward is robust to other risk factors and previously documented market anomalies that affect variation in returns. Comparing the market penalty for missing analyst expectations to the premium for achieving analyst expectations, Lopez and Rees (2002) find that the former is significantly higher than the latter and that firms that consistently achieve analyst forecasts have a significantly higher earnings response coefficient. Measuring stock sensitivity by outstanding stock recommendations, Abarbanell and Lehavy (2003b) find that firms rated with a buy recommendation are more likely to inflate earnings to meet or slightly exceed analyst expectations. In addition to capital market consequences, evidence of Graham et al. (2005) suggests that managerial concerns over job security and reputation offer a strong incentive to achieve analyst expectations.

The importance of analyst forecasts as an earnings target appears to have risen over the last decade. Even though in the initial evaluation of the hierarchy of earnings targets by Degeorge et al. (1999) analyst expectations had the lowest rank, Brown and Caylor (2005) find that from the mid-1990s managers sought to avoid negative earnings surprises more than to avoid reporting losses or earnings decreases. The authors rationalise the switch in the target hierarchy by reporting evidence of a significantly higher reward (penalty) for achieving (missing) analyst expectations than for achieving (missing) the other two earnings targets. They attribute the higher premium to temporal increases in the accuracy and the precision of analyst forecasts, analyst following, media attention on meeting or beating analyst expectations and the number of firms followed by analysts.

Given the strong incentives to meet analyst expectations, substantial research has focused on the methods firms use to hit targets. The most popular techniques examined are positive abnormal accruals and earnings guidance to walk down analyst expectations to managers' desired figure. Burgstahler and Dichev (1997) provide evidence of firms using working capital accruals to avoid losses or earnings declines. They observe high changes in working capital for earnings that fall just above target, giving rise to a discontinuity in their distribution. Payne and Robb (2000) find that firms with pre-managed earnings below analyst forecasts have greater positive abnormal accruals. Dechow et al. (2000) find that firms that just meet analyst forecasts have higher abnormal working capital accruals than firms that just miss the target, while Das and Zhang (2003) document that managers use working capital accruals to round up reported EPS to meet analyst forecasts. Abarbanell and Lehavy (2003a) find that abnormal accruals are the main source of both the tail and the middle asymmetry in the distribution of forecast errors, indicating the use of accruals to meet analyst expectations in the current period or to increase the likelihood of hitting the target in the future. Matsumoto (2002) documents a positive association between income-increasing, abnormal accruals and the likelihood of avoiding negative earnings surprises. This evidence on accruals management comes from US data predating the accounting scandals of the early 2000s (e.g. Enron, Worldcom) and the Sarbanes Oxley Act of 2002. Based on a subsequent period, Graham et al. (2005) report that chief financial officers of US firms are generally reluctant to use discretionary accounting adjustments to hit earnings targets. In the post-scandals period, Koh et al. (2008) find that the propensity of US managers to rely on income-increasing, abnormal accruals to meet analyst expectations has decreased.

Bartov et al. (2002) provide preliminary evidence on earnings forecast guidance. They observe that even though analyst forecasts made at the beginning of a period overestimate earnings on aver-

age (giving a negative forecast error), as the end of the period approaches, analyst optimism turns to pessimism (giving a positive earnings surprise). They also find that the proportion of negative forecast errors ending with zero or positive earnings surprises is greater than the proportion of positive or zero forecast errors ending with negative earnings surprises. Matsumoto (2002) extends these findings by documenting a significant association between a proxy for earnings forecast guidance and the likelihood of beating expectations. Similarly, Burgstahler and Eames (2006) find that in addition to managing abnormal accruals, firms manage analyst earnings forecasts downward to just meet analyst expectations. In the post-scandals period, Koh et al. (2008) document an increase in the tendency of US firms to rely on earnings guidance to meet analyst expectations.

Recent US studies examine a potentially new device to meet analyst expectations: classifications of non-recurring items. While evidence suggests that customised earnings (e.g. pro forma earnings or Street earnings[2]) are more informative and more persistent than GAAP earnings (Bradshaw and Sloan, 2002; Bhattacharya et al., 2003), the financial press and accounting regulators in the US claim that managers may be behaving opportunistically by removing value-relevant items to hit earnings benchmarks. Doyle et al. (2003) justify regulatory scepticism with evidence that the items firms exclude from Street earnings are negatively associated with firms' future operating performance and that the market does not reflect this information. McVay (2006) adds to these findings with evidence that US firms re-classify core expenses as negative special items. She documents a positive association between a measure of unexpected core earnings and income-increasing, special items and finds that the association is stronger for firms that would have just missed the analyst forecast without the reclassification. Lin et al. (2006) provide consistent evidence when examining mechanisms that US firms use to meet or beat analyst expectations. Their evidence suggests that US firms use earnings forecast guidance and classification shifting and to a limited extent abnormal accruals to achieve analyst expectations. On average they find that the use of earnings forecast guidance, classification shifting and income increasing, abnormal accruals increases the probability of meeting or beating analyst expectations by 9%, 10% and 5% respectively.

2.2. UK evidence and regulatory framework

Evidence in the UK starts with the use of working capital accruals to achieve earnings targets. Peasnell et al. (2000a) document that UK firms with negative pre-managed earnings levels and changes have positive mean AWCAs. This holds for the period before the regulatory changes of the early 1990s. The enforcement of FRS 3, subsequent standards issued by the Accounting Standards Board (ASB) and the Cadbury Report reflected a general shift by UK regulatory bodies towards increased transparency and enhanced governance to restrain managerial attempts to manipulate earnings. Peasnell et al. (2000a) find that, post-Cadbury, the increased level of governance restrained the use of income-increasing AWCAs to avoid losses or earnings declines. This evidence is consistent with the regulatory shift and casts doubt on whether UK firms still use income-increasing AWCAs to achieve earnings targets in the post-FRS 3 period. Gore et al. (2007) examine the distributional properties of reported and pre-managed earnings and find that AWCAs are the main source of discontinuity of earnings levels throughout the period 1989–1998, but to a lesser extent post-FRS 3. However, examining the distributions of pre-managed and reported earnings to document the use of AWCAs to hit targets is sensitive to measurement error in AWCA estimates and likely to lead to erroneous inferences. Prior research has established that most abnormal accrual models are misspecified for firms that experience extreme operating performance (Dechow et al., 1995; Kothari et al., 2005). This results in misclassifications of normal accruals as abnormal in periods when firms are highly profitable or unprofitable. In this case, the result that pre-managed earnings do not display a discontinuity around zero cannot be clearly attributed to the use of abnormal accruals to exceed the benchmark. The misclassification argument becomes even more critical in view of the evidence of Brown (2001) that the discontinuity of earnings targets around zero is mainly a characteristic of profitable firms. To address this methodological limitation, we re-examine the use of AWCAs to achieve analyst expectations using a research design that is less subject to measurement error in AWCA estimates.

A further important element of the ASB's intervention in the financial reporting choices of UK firms was FRS 3's provisions for non-recurring items and the option to disclose customised earnings measures. FRS 3 required firms to distinguish between operating and non-operating exceptionals. Non-operating exceptionals included profits or losses on sales or termination of operations, fundamental reorganisation or restructuring costs and profits or losses on the disposal of fixed assets.

[2] Street earnings is the usual term for the adjusted earnings figure that analyst tracking services such as I/B/E/S, Zacks and First Call report as actual. Examples of charges that US firms exclude from these adjusted earnings are restructuring charges, write downs and impairments, R&D expenditures, merger and acquisition costs, mandatory stock compensation expense, goodwill amortisation, and certain results of subsidiaries (Bradshaw and Sloan, 2002).

Firms had to disclose these items under separate headings after operating profit, while they could disclose exceptional items relating to operations through a note or on the face of the income statement. Further to enhancing their disclosure, FRS 3 widened the definition of exceptionals to include any items of exceptional size or nature, thereby enabling firms to classify exceptional items according to the nature of the firm's operations. FRS 3 also redefined discontinued operations and required firms to disclose results from these operations separately in the income statement. Even more important, FRS 3 allowed firms to disclose alternative EPS on other profit levels, enabling them to remove non-recurring items and highlight a measure of core earnings. Pope and Walker (1999) report evidence of firms using exceptional items to classify bad news earnings components, mainly in the form of write-offs of large transitory losses. Consistent with this evidence, Walker and Louvari (2003) argue that disclosures of alternative EPS post-FRS 3 reflected managerial perceptions of persistent earnings. Choi et al. (2005) substantiate this argument with evidence that alternative EPS is more value-relevant than net income in terms of earnings predictability and price–earnings and return–earnings associations. Choi et al. (2007) find that the items (both gains and losses) managers exclude from alternative earnings definitions are value-irrelevant. Athanasakou et al. (2007) report an increase in persistence of pre-exceptional earnings post-FRS 3, suggesting that FRS 3 enhanced the role of classificatory choices over exceptional items in identifying sustainable profitability. While this evidence is inconsistent with misclassifications of non-recurring items, the broader scope for classificatory choices under FRS 3 may also have yielded a new mechanism for UK firms to meet analyst expectations. Gore et al. (2007) examine the distributions of positive and negative extraordinary items by earnings surprise portfolios pre-FRS 3 and find evidence consistent with firms classifying core expenses as extraordinary items to just meet analyst expectations. However, they do not find similar evidence for exceptional items post-FRS 3. Possible reasons are that the authors do not explore the association between exceptional items and pre-exceptional earnings in the absence of earnings management, or the properties of different types of exceptional items post-FRS 3.

Brown and Higgins (2005) provide initial evidence of earnings forecast guidance by UK firms. The authors argue that in strong investor protection environments, characterised by common law and market orientation, managers have greater incentives to avoid negative earnings surprises and they are more likely to use earnings forecast guidance than to manage reported earnings due to tighter financial reporting regulation and less rigorous regulation of forecast guidance. Consistent with their arguments, the authors find that the UK and other strong investor protection countries (e.g. the US, Sweden) have higher frequencies of firms engaging in earnings forecast guidance (approximately 37%) than countries with weak investor protection (e.g. Italy, Korea, Turkey).[3] In line with this initial evidence, the survey by Choi et al. (2006) shows that investment professionals and financial managers view earnings forecast guidance as a prevalent practice in the UK.

Our study contributes to this literature by examining whether UK firms are indeed more likely to use earnings forecasts guidance than earnings management to meet analyst expectations. In addition to abnormal accruals, we study classification shifting as a potential mechanism to hit the target in view of the broader scope for classificatory choices under FRS 3. Our study is similar to that of Lin et al. (2006) insofar as we examine mechanisms to meet analyst expectations. Nonetheless, the distinctive characteristics of the UK financial reporting framework allows us to conduct a more thorough examination by considering the relevant restraints (opportunities) that it imposes (creates) on the use of mechanisms to meet analyst expectations. To this extent our examination is more intuitive and offers direct insights to accounting standard setters, policy makers and market participants. These insights should be of special interest to international regulators, as they currently seek to optimise the framework for reporting financial performance (IASB 2008). In addition to its broader implications, our study uses a more sophisticated research design to test for accruals management and classification shifting, allowing for more valid inferences on the use of these practices to achieve analyst expectations.

3. Research design

Our objective is to examine whether UK firms engage in accruals management, classification shifting or earnings forecast guidance to meet analyst expectations. To examine earnings or expectations management to meet analyst expectations, we test the association between the probability of hitting the target and an earnings or expectations management proxy. To this end, we estimate abnormal accruals, misclassified non-recurring items and downward-guided analyst forecasts. For non-recurring items it is impossible to estimate the part

[3] La Porta et al. (1998) and Brown and Higgins (2005) show that the UK has the highest investor protection ranking among 21 countries (including the US, Australia, Canada, France Germany, Hong Kong, Greece, Spain Sweden and Switzerland). The general shift by UK regulatory bodies towards increased transparency and enhanced governance has contributed to the enforced investor protection in the UK.

resulting from intentional misclassifications because these items are unexpected and therefore unpredictable. Accordingly, for classification shifting we use a separate research design.

3.1. Abnormal accruals to meet analyst expectations

As the end of an accounting period nears, managers can observe the firm's underlying earnings as well as the analyst forecast. During this time they can estimate any shortfall from the consensus forecast and use income-increasing AWCAs to eliminate it. However, analyst forecasts change up to the announcement of the results. From the financial year-end to the announcement of the results, managers cannot implement working capital accrual choices involving timing of transactions (e.g. accelerating sales). Other accrual choices (deferrals, accrued expenses, provisions, etc.) need estimating and booking within the accounting system. The process involves time constraints that reduce flexibility in using accruals to meet forecasts. Kasznik and McNichols (2002) show that the market penalises firms that previously met analyst expectations but subsequently fail to do so. This means there is a cost to meeting expectations through positive abnormal accruals, as their reversal may prevent managers from meeting expectations in future accounting periods. The aggressive use of positive abnormal accruals to meet analyst expectations is also more likely to raise the suspicions of auditors and the board of directors, who tend to scrutinise income-increasing, discretionary, accounting choices.

To capture income-increasing earnings management through working capital accruals, we use an indicator of positive abnormal working capital accruals (*POSAWCA*). Appendix A defines all the variables in the study. We focus on AWCAs instead of abnormal total accruals as in Matsumoto (2002) and Lin et al. (2006) for three reasons. First, research shows that working capital accruals account for most of the variation in total accruals (Sloan, 1996; Subramanyam, 1996; Thomas and Zhang, 2000; Dechow and Dichev, 2002). Second, working capital accruals are more flexible than non-current accruals (e.g. depreciation, amortisation, impairments) due to their frequent occurrence and the higher degree of judgment involved in their estimation. Third, non-current accruals usually represent large, visible, one-off costs or losses (e.g. write-downs, provisions for restructuring costs, impairments, losses on disposal of assets). Managers are unlikely to use these items to meet analyst expectations as analysts forecast core profitability, i.e. earnings before exceptional and other-non-recurring items.[4]

We estimate AWCAs using the cross-sectional modified Jones model with lagged ROA as a control for operating performance as follows:[5]

$$\frac{WCA_{it}}{A_{i,t-1}} = \lambda_0 \frac{1}{A_{i,t-1}} + \lambda_1 \frac{\Delta CR_{it}}{A_{i,t-1}} + \lambda_2 ROA_{i,t-1} + e_{i,t} \quad (1)$$

$$\frac{AWCA_{it}}{A_{i,t-1}} = \frac{WCA_{it}}{A_{i,t-1}} - \left[\frac{\hat{\lambda}_0}{A_{i,t-1}} + \hat{\lambda}_1 \frac{\Delta CR_{it}}{A_{i,t-1}} + \hat{\lambda}_2 ROA_{i,t-1} \right]$$

where ΔCR_{it} and $AWCA_{i,t}$ are change in revenue net of change in accounts receivable and AWCAs for firm i in period t, ROA_{it-1} and A_{t-1} are return on assets and total assets for firm i in period t–1, λ_0 and λ_1 are regression parameters and $\hat{\lambda}_0$ and $\hat{\lambda}_1$ are OLS coefficients. We estimate equation (1) cross-sectionally within industry–years to correct for changing economic conditions that might affect accruals independently of earnings management. Peasnell et al. (2000b) show that the cross-sectional modified Jones model captures relatively subtle instances of accruals management in the UK. We estimate the model for each industry–year with at least six observations to ensure sufficient data for parameter estimation. We use Datastream Level 6 industry classifications.

3.2. Earnings forecast guidance to meet analyst expectations

If earnings fall short of analyst expectations, firms can guide these expectations down to avoid excessively optimistic forecasts and increase the probability of meeting analyst expectations. UK investment professionals and financial managers view earnings forecast guidance as a common practice (Choi et al., 2006). Similar to positive abnormal accruals, earnings forecast guidance to meet analyst expectations entails costs. If initial forecasts are excessively high, guiding forecasts down requires analysts to revise their earnings expectations, which is likely to result in a negative market reaction at the forecast revision date. Continuous downward forecast guidance to keep forecasts at an achievable level can result in a period of falling prices. For earnings forecast guidance to be beneficial, the cost of a negative earnings surprise must exceed the cost of lower stock prices due to downward forecast revisions. This is likely to be the case

[4] Analysts forecast earnings on a continuing operations basis, before discontinued operations and exceptional and non-operating items, to retain persistent income components that are important for security valuation (I/B/E/S Glossary 2000: 8).

[5] As managerial discretion is not observable, measurement error in abnormal accruals is inherent. Prior research that evaluates accrual models (Dechow et al., 1995; Healy, 1996; Young, 1999; Thomas and Zhang, 2000) concludes that most accrual models do not control adequately for operating performance, exceptional and non-operating events, and growth. To mitigate concern over the measurement error in the accruals model (equation 1) we add lagged *ROA* as a control for operating performance and focus on working capital accruals which are less likely to be affected by exceptional and non-operating events, compared to non-current accruals. We also include a measure of growth in our multivariate specification (see equation 5).

as market reactions to earnings surprises tend to be stronger than market reactions to forecast revisions (Bartov et al., 2002: 189).

To obtain a proxy for earnings forecast guidance, we follow Matsumoto (2002). Her methodology allows us to disentangle innate analyst forecast revisions in response to bad earnings news from excessive downward revisions of the final analyst forecast and to focus on the latter to capture firms that guide analyst forecast down. We derive an indicator of downward-guided forecasts (*DOWN*) by comparing the last earnings forecast before the release of the earnings announcement (*AF*0) to an estimate, based on stock returns, of what the forecast would have been in the absence of guidance (*EF*). We define the unexpected forecast (*UEF*) as *AF*0 minus *EF* and set *DOWN* to 1 (0) when *UEF* is negative (positive).

To estimate *EF* we use information that is available to analysts in forming their earnings expectations. We first model the change in I/B/E/S actual EPS (ΔEPS) scaled by lagged share price ($P_{i,t-1}$) as a function of the prior year's change in earnings scaled by lagged share price and cumulative excess returns over the current year (*CRET*)

$$\Delta EPS_{i,t}/P_{i,t-1} = a_{1,t} + a_{2,t}\,(\Delta EPS_{i,t-1}/P_{i,t-2}) + a_{3,t}CRET_{i,t} + e_{i,t} \quad (2)$$

CRET is excess (market-adjusted) return cumulated from the month following the year *t*-1 earnings announcement to the month of the year *t* earnings announcement. This variable captures additional value-relevant information available to analysts in estimating their forecasts. We estimate equation (2) cross-sectionally within industry–years (using OLS), similar to the method of estimating AWCAs. Using cross sectional estimation with the time dimension fixed and scaling by lagged price means that stationarity issues arising from the inclusion of a lagged dependent variable in equation (2) is not a cause for concern. To mitigate the effect of outliers on parameter estimation, we winsorise the top and bottom 0.5% of the variables.[6] To calculate expected change in earnings, we use parameter estimates of the prior year, so as to use only data that analysts could have obtained when forecasting earnings

$$E(\Delta EPS_{i,t}) = [\hat{a}_{i,t-1} + \hat{a}_{2,t-1}\,(\Delta EPS_{i,t-1}/P_{i,t-2}) + \hat{a}_{3,t-1}CRET_{i,t}] \times P_{i,t-1} \quad (3)$$

EF is lagged I/B/E/S actual EPS plus the expected change in earnings $E(\Delta EPS)$

$$EF_{i,t} = EPS_{i,t-1} + E(\Delta EPS_{i,t}) \quad (4)$$

After obtaining *EF*, we derive *DOWN* as follows

$$UEF_{i,t} = AF0_{i,t} - EF_{i,t}$$

$$DOWN_{i,t} = \begin{cases} 1 & \text{if } UEF_{i,t} < 0 \\ 0 & \text{otherwise} \end{cases}$$

3.3. Methodology and empirical predictions

To examine whether the proxies for accruals management and earnings guidance capture the mechanisms UK firms use to meet analyst expectations we examine the relation between (a) the probability of meeting analyst forecasts; and (b) the indicators of positive AWCAs (*POSAWCA*) and of downward-guided analyst forecasts (*DOWN*), using contingency tables and multivariate models that control for other factors associated with meeting analyst expectations. We estimate the following logit regression of the probability that a firm meets or beats analyst forecasts at the earnings announcement date

$$Prob(MBE = 1|X) = F(\beta_0 + \beta_1 POSAWCA_{i,t} + \beta_2 DOWN_{i,t} + \beta_3 PROFIT_{i,t} + \beta_4 POS\Delta EARN_{i,t} + \beta_5 VREARN_{i,t} + \beta_6 GROWTH_{i,t} + \beta_7 LIT_{i,t} + \beta_8 INDPROD_{i,t} + \beta_9 SIZE_{i,t} + \beta_{10} MBE_{i,t-1} + u_{i,t}) \quad (5)$$

where

$$F(\beta' X) = \frac{e^{\beta' X}}{1 + e^{\beta' X}}$$

MBE equals 1 if the earnings surprise is zero or positive, and 0 otherwise. The earnings surprise is actual EPS minus the latest analyst forecast made prior to the earnings announcement date, both from I/B/E/S. As prior UK evidence casts doubt on whether UK firms used AWCAs to meet analyst expectations post-FRS 3, the sign of the coefficient on *POSAWCA* is an empirical question. If UK firms guide analyst forecasts down to meet analyst expectations, consistent with the survey evidence of Choi et al. (2006), we expect the coefficient on *DOWN* to be positive.

In addition to meeting analyst expectations, the prior literature establishes two other earnings targets: profits and positive earnings changes. Degeorge et al. (1999) were the first to address the hierarchy of earnings targets. Based on conditional distributions of the three earnings benchmarks, they infer a 'pecking order', with profit first, prior year earnings second and analyst forecasts third. As they find no evidence of a discontinuity around zero in the distributions of forecast errors for firms reporting losses and earnings decreases, they conclude that meeting analyst expectations matters only if both other targets are met. Similarly, Brown (2001) finds that profitable firms make the most effort to meet analyst expectations and that the discontinuity around the earnings benchmark is not evident in loss-making firms. Even though Brown and Caylor (2005) suggest that since the mid-1990s managers

[6] We set the bottom 0.5% of the values of the variables equal to the value corresponding to the 0.5th percentile, and the top 0.5% of the values to the value corresponding to the 99.5th percentile.

have sought to avoid negative earnings surprises more than losses and earnings declines, Dopuch et al. (2003) find that there is an incremental market credibility premium for firms that meet analyst expectations in addition to meeting a time series benchmark. Their evidence suggests that firms have stronger incentives to meet analyst forecasts once they meet prior year earnings. In their survey, Graham et al. (2005) provide evidence consistent with the priority of meeting prior-year earnings over analyst expectations. As evidence on the priority of earnings targets is controversial and focuses on US firms, the association between the three earnings targets in the UK remains an empirical question. If there is a pecking order in meeting earnings targets and analyst forecasts is last in the order, we need to control for the targets of profits and earnings increases. Accordingly, we add a profit indicator, *PROFIT*, and an indicator of positive change in earnings, *POSΔEARN*. We expect the coefficients on *PROFIT* and *POSΔEARN* to be positive.

Matsumoto (2002) argues that the underlying reason for Brown's (2001) findings is the low value-relevance of the earnings of loss-making firms and not merely the sign of contemporaneous earnings. She argues that managers of firms with low value-relevance of earnings are less likely to be concerned about hitting analyst forecasts since investors put less emphasis on a poor indicator of performance. Accordingly, we add a proxy for the value-relevance of earnings (*VREARN*) and predict that firms with low value-relevance of earnings are less likely to meet analyst expectations. Therefore, we expect the coefficient on *VREARN* to be positive.

Skinner and Sloan (2002) find that the discontinuity in the distribution of earnings surprises around zero is stronger for higher-growth firms. Managers of such firms have stronger incentives to avoid negative earnings surprises because the market reaction to earnings announcements is more severe for these firms. Moreover, Dechow et al. (2000), show that firms with zero earnings surprises have, along with high market-to-book ratios, high levels of accruals. Therefore we control for *GROWTH* and expect firms with higher growth opportunities to have greater incentives to meet analyst expectations. Similar to Skinner and Sloan (2002), we measure growth using the market-to-book ratio. We expect the coefficient on *GROWTH* to be positive.

Firms with a higher risk of shareholder litigation have greater incentives to meet analyst expectations and reduce the possibility of shareholder lawsuits. To control for this effect Matsumoto (2002) includes an industry dummy (*LIT*) identifying firms in the high risk industries of biotechnology, computers, electronics and retailing. She argues that the industry indicator offers a better measure of ex-ante litigation risk, as it is unaffected by earnings management. Although we do not expect shareholder litigation risk to be as important for UK firms, we add *LIT* to control for any possible effect. To the extent firms in the high risk industries of biotechnology, computers, electronics and retailing have greater incentives to meet analyst expectations, we expect the coefficient on *LIT* to be positive.

We control for contemporaneous shocks to earnings since they are strongly related to analyst forecast errors. A firm's performance for the period, as well as general macroeconomic shocks, affect the probability of meeting analyst expectations. Positive earnings shocks are more likely to result in positive forecast errors than are negative earnings shocks. We control for this effect through *POSΔEARN*. To control for the impact of macroeconomic conditions on forecast errors, we include average annual growth in industrial production (*INDPROD*). Similar to Matsumoto (2002), we expect the frequency of meeting analyst expectations to increase with growth in industrial production, thus we expect the coefficient on *INDPROD* to be positive. Furthermore, as larger firms are more subject to public scrutiny their managers have stronger incentives to meet analyst expectations. Therefore we control for size and expect the coefficient on *SIZE* to be positive. Finally, Kasznik and McNichols (2002) find that firms that meet analyst expectations in consecutive years receive a market premium that is incremental to the higher future earnings that investors can rationally expect from these firms. This signifies the existence of a 'credibility' reward for consistently meeting expectations, giving greater incentives to meet analyst expectations in the current year if the firm met expectations in the previous year. We add MBE_{t-1} to control for this effect and expect its coefficient to be positive.[7]

Doyle et al. (2004) argue that removing observations with large forecast errors and focusing around the zero earnings surprise benchmark gives a more powerful test of earnings or expectations management to hit the forecast. Therefore, we repeat equation (5) using JMBE instead of MBE, which captures cases where firms just meet analyst forecasts over cases where firms just miss the target, as follows:

$$\begin{aligned} Prob(JMBE = 1 \mid X) = F(&\beta_0 + \beta_1 POSAWCA_{i,t} \\ &+ \beta_2 DOWN_{i,t} + \beta_3 PROFIT_{i,t} + \beta_4 POS\Delta EARN_{i,t} \\ &+ \beta_5 VREARN_{i,t} + \beta_6 GROWTH_{i,t} + \beta_7 LIT_{i,t} \\ &+ \beta_8 INDPROD_{i,t} + \beta_9 SIZE_{i,t} + \beta_{10} MBE_{i,t-1} + u_{i,t}) \end{aligned} \quad (6)$$

[7] We also test a specification adding MBE_{t-2} and MBE_{t-3} (see footnote 15).

JMBE equals 1 if the earnings surprise (*SURP*) is in the interval £0.00 ≤ *SURP* < £0.02 and 0 if the earnings surprise is in the interval –£0.02 ≤ *SURP* < 0.[8] Using this specification we delete observations outside the interval –£0.02 ≤ *SURP* < £0.02.[9]

3.4. Classification shifting to meet analyst expectations

The provisions of FRS 3 broadened the scope for classificatory choices over non-recurring items. As both managers and analysts tend to exclude non-recurring items from core earnings, classification shifting of core expenses or losses to non-recurring items after the end of the accounting period and before the announcement of the results could increase the probability of hitting the final forecast. Unlike discretionary accounting choices, classification shifting does not flow through the accounting system, giving managers a more valuable timing option to meet the final forecast. In addition, classification shifting does not affect net income, thus limiting the scrutiny of auditors, outside monitors and regulators (Nelson et al., 2003; McVay, 2006).[10] Finally, classification shifting does not affect future period income, reducing substantially its cost as an earnings management device.

FRS 3's transparency requirements imposed an important cost of classification shifting on UK firms. FRS 3 required firms that reported alternative EPS to reconcile this to the basic figure, to disclose it consistently over time, to give it no greater prominence in the annual report than basic EPS and to explain the reasons for any alternative measure and its significance, adjacent to alternative EPS or through a note. Furthermore, for each exceptional item in the income statement, firms had to provide an adequate description to allow users to understand its nature. Transparency requirements add a constraint to attempts to shift core expenses below core earnings, as they increase the likelihood that investors detect misclassified non-recurring items. Although McVay (2006) does not explore potential changes in the practice of classification shifting by US firms after the Sarbanes Oxley Act of 2002, recent evidence suggests that the disclosure requirements of the Act had a significant impact on US managers' attempts to misclassify income components (Heflin and Hsu, 2008).

Even though transparency requirements restrain classification shifting, investors may be unable to distinguish cases of misclassified non-recurring items. This is especially true of operating exceptional items, as it is more difficult to determine their degree of persistence. In addition, while auditors may question classification manipulations involving more visible and specific non-operating exceptionals, they are less likely to challenge classifications of operating exceptionals. This is because the latter classifications rely more on managerial judgment and less on explicit definitions and disclosure requirements.

To examine whether UK firms reclassified core expenses as non-recurring items to meet analyst expectations in the post-FRS 3 period, we test the association between unexpected core earnings (levels and changes) and income-increasing, non-recurring items. Following McVay (2006), we derive measures of expected core earnings (*CE*) levels and changes (Δ*CE*) as follows:

$$CE_{i,t} = \gamma_0 + \gamma_1 CE_{i,t-1} + \gamma_2 ATO_{i,t} + \gamma_3 WCA_{i,t-1} + \gamma_4 WCA_{i,t} + \gamma_5 \Delta SALES_{i,t} + \gamma_6 NEG\_\Delta SALES_{i,t} + u_{i,t} \quad (7)$$

$$\Delta CE_{i,t} = \gamma_0 + \gamma_1 CE_{i,t-1} + \gamma_2 \Delta CE_{i,t-1} + \gamma_3 \Delta ATO_{i,t} + \gamma_3 WCA_{i,t-1} + \gamma_4 WCA_{i,t} + \gamma_5 \Delta SALES_{i,t} + \gamma_6 NEG\_\Delta SALES_{i,t} + u_{i,t} \quad (8)$$

As a proxy for core earnings (CE) we use I/B/E/S actual EPS[11] multiplied by the weighted average

[8] To ensure equally sized intervals, we include –£0.02 in the interval of firms that just miss analyst expectations, but exclude £0.02 from the interval of firms that just meet or beat analyst expectations.

[9] Our core results remain when using a narrower *JMBE* interval –£0.01 ≤ *SURP* < £0.01.

[10] Auditors and outside monitors are more concerned with issues of unrecognised expenses, or abnormal variations in margins and other ratios, and are less likely to question the appropriate classification of expenses. Also firms reporting extraordinary and exceptional items tend to be declining in performance, so even though their core earnings might be higher than actual core earnings, their reported earnings may still be below prior-period and industry benchmarks.

[11] We choose I/B/E/S actual EPS as a proxy for core earnings for three reasons. First, compared to alternative EPS disclosed in the income statement, using I/B/E/S actual EPS allows us to expand the sample and run more powerful tests using a large panel of data instead of a small hand-collected sample. Second, I/B/E/S actual EPS is closer to analysts' definitions of earnings, which is important when calculating earnings surprises and our measure of *(J)MBE*. Bhattacharya et al. (2003) argue that to the extent there is a mismatch between the actual earnings and the forecast figure, there can be a severe error-in-variables problem in the earnings surprise measure. Third, compared with alternative adjusted earnings metrics available in Datastream, we expect I/B/E/S actual EPS to be a more accurate proxy of the firm's core earnings. This is because analyst tracking services adjust realised earnings by making exclusions for non-recurring items on what Gu and Chen (2004) refer to as a 'case by case' basis instead of the category by category basis that Datastream follows. This means that the tracking services treat transitory items selectively according to firm-specific characteristics, with the result that their exclusions are closer to those of managers. To assess the relation between alternative EPS, I/B/E/S actual EPS, and Datastream adjusted EPS we use data on alternative EPS disclosures for 1996 and 2001 for the 500 largest UK listed non-financial firms. We are grateful to Dr. Young-Soo Choi, Lancaster University, for providing this data. Descriptive analysis of this sample indicates that alternative EPS is most highly correlated with I/B/E/S actual EPS and that the mean and median differences between the two figures are not statistically significant.

number of shares (both unadjusted for splits)[12] and scaled by total sales. Lagged core earnings controls for earnings persistence over time. Given the close association between core earnings and profit margin, the asset turnover ratio (*ATO*) controls for the inverse relation with the profit margin, especially for firms with large income-increasing, non-recurring items (e.g. restructuring or reorganisation costs). Lagged working capital accruals (WCA_{t-1}) capture the information content of prior-year accruals for current-period income. Current working capital accruals (WCA_t) controls for extreme operating performance, as it is highly correlated with accrual levels. As excessive accruals could also reflect accruals management, controlling for WCA_t is necessary to capture any excess profits associated solely with classification shifting. Finally, change in sales ($\Delta SALES$) controls for the effect of sales growth on fixed costs. As this effect differs between sales increases and decreases, we allow a separate coefficient for sales declines (*NEG_*$\Delta SALES$). The model of change in *CE* (equation 8) is not obtained by merely differencing equation (7). Including both lagged *CE* and lagged ΔCE allows the degree of mean reversion to vary with the level of prior-year earnings.

We estimate equations (7) and (8) cross-sectionally within industry–years (using OLS). Unexpected core earnings (*UCE*) and unexpected change in core earnings ($U\Delta CE$) are the differences between reported core earnings and change in core earnings and their predicted values, which we derive based on the coefficients of equations (7) and (8). To examine whether classification shifting represents an earnings management tool to meet analyst expectations, we test the association between *UCE* and $U\Delta CE$ and income-increasing, non-recurring items for the entire sample and subsets of firms that are increasingly likely to use classification shifting to hit the target. In particular, similar to McVay (2006) we estimate the following two OLS regressions:

$$UCE_{i,t} = \delta_0 + \delta_1 TNRI_{i,t} + u_{i,t} \quad (9)$$

$$U\Delta CE_{i,t+1} = \delta_0 + \delta_1 TNRI_{i,t} + u_{i,t} \quad (10)$$

where TNRI is income-increasing, total non-recurring items defined as:

TNRI = I/B/E/S actual earnings – Net Income/Sales

and I/B/E/S actual earnings is the I/B/E/S reported actual EPS multiplied by the weighted average number of shares (both unadjusted for splits). Net income is earnings after extraordinary items. If I/B/E/S actual earnings is greater than net income, then total non-recurring items are income-increasing (through the exclusion of negative items). We estimate equations (9) and (10) for the entire sample and two subsets of firms: (a) firms with income increasing total non-recurring items (*TNRI* > 0); and (b) firms that would have just missed the analyst forecast had they not re-classified non-recurring items (*JUSTMET* = 1). JUSTMET equals 1 if the earnings surprise is from £0.00 to £0.02 per share, total non-recurring items are income-increasing and the earnings surprise minus total non-recurring items per share is negative, 0 otherwise. To the extent UK firms classification shift, unexpected core earnings increase with non-recurring items in year *t*, giving a positive δ_1. If classification shifting serves as a mechanism to meet analyst expectations, the positive association between *TNRI* and *UCE* will be more profound for the two subsets of firms. While a positive association between *TNRI* and *UCE* is consistent with classification shifting, it is also consistent with efficiency gains resulting from disposals of unprofitable subsidiaries or from rationalising operations. To distinguish between these two competing hypotheses, we test whether the increase in *UCE* reverses in year *t*+1, as the core expenses firms misclassify in year *t* recur in year *t*+1, similar to McVay (2006). A positive δ_1 in equation (9) and a negative δ_1 in equation (10) are more consistent with classification shifting.

Choi et al. (2005) classify total non-recurring items that UK firms tend to exclude from core earnings into five groups: (a) non-operating exceptional items; (b) operating exceptional items; (c) other non-operating exceptional items; (d) charges relating to asset values; and (e) other non-recurring items. Non-operating exceptionals are usually large transitory items resulting from structural events. Their specific nature allows investors to assess their persistence with greater confidence. Moreover, the incidence and value of the finite number of events giving rise to such exceptionals constrain the extent to which managers can use them for classification shifting (Godfrey and Jones, 1999). The remaining items include: specified or unspecified exceptional operating costs; exceptional dividends, interest or taxation; other provisions; goodwill amortisation; amortisation of unspecified intangible assets; impairment diminution or write-off of goodwill; revaluation or impairment of fixed assets and discontinued operations; and acquisition, merger and demerger costs. These items offer greater latitude for classification shifting as their classification relies heavily on managerial judgment. To accommodate the different degree of clas-

[12] All data in the I/B/E/S detail file that are most commonly used in prior research appear on a split-adjusted basis to ensure that per share amounts are comparable over time. To calculate non-recurring items we need the historical figures for I/B/E/S actual EPS. Accordingly we 'unsplit' I/B/E/S actual EPS using the proper adjustment factors to derive the originally reported amounts.

sification discretion involved in the groups of non-recurring items, we extend the two equations of McVay (2006) by decomposing total non-recurring items (*TNRI*) into non-operating exceptional items (*NOEI*) (group (a)) and other non-recurring items (*ONRI*) (groups (b)–(e)) as follows

$$UCE_{i,t} = \delta_0 + \delta_{1a} NOEI_{i,t} + \delta_{1b} ONRI_{i,t} + u_{i,t} \quad (11)$$

$$U\Delta CE_{i,t+1} = \delta_0 + \delta_{1a} NOEI_{i,t} + \delta_{1b} ONRI_{i,t} + u_{i,t} \quad (12)$$

NOEI is non-operating exceptional items, i.e. profits or losses on the sale or termination of operations, costs of fundamental reorganisations or restructuring and profits or losses on the sale of fixed assets, adjusted for tax and minority interest and scaled by sales. We derive *ONRI* as the residual non-recurring items after deducting *NOEI* from *TNRI*. As other non-recurring items offer a more flexible device for classification shifting to meet analyst expectations we expect δ_{1b} to be positive.

Abarbanell and Lehavy (2002) find that when core earnings slightly exceed analyst forecasts while GAAP earnings fall slightly below, core earnings are more value-relevant than GAAP earnings. Therefore, they suggest that future research should isolate cases where classifications of small income-increasing non-recurring items lead to small positive earnings surprises. The magnitude of non-recurring items is an interesting property when considering classification shifting to meet analyst expectations. Large non-recurring items are highly visible and depend on the occurrence of specific (e.g. structural) events. Conversely, small non-recurring items are less debatable and offer a more flexible means of classification shifting, especially in cases where pre-managed earnings fall slightly short of the final analyst forecast. To incorporate this feature into our analysis, we repeat equations (9)–(12) on subsets of firms that just meet analyst expectations using small income-increasing, non-recurring items. We distinguish small non-recurring items similar to Doyle et al. (2004). *SmallTNRI* equals 1 if *TNRI* is positive and less than median *TNRI* (scaled by sales) for firms with positive *TNRI* in the same year.

As we use panel data, we need to control for cross-sectional dependence. To alleviate bias in the standard errors of equations (9)–(12) due to heteroskedasticity and cross-sectional dependence, we estimate standard errors clustered by year.

4. Sample selection

We collect data for all UK (dead and live) listed firms from Datastream for the period 1994 to 2002. We begin with 1994 because we focus on the period following the enforcement of FRS 3 (23 June 1993) and coverage of UK firms on I/B/E/S is limited for earlier years. Our sample period cut-off is 2002 due to data unavailability for non-operating exceptional items and other non-recurring items after the merger of Datastream with Worldscope in 2003.[13] We exclude financial firms because of their substantially different financial reporting environment and utilities because they are regulated and their earnings growth is typically more predictable. We also eliminate all accounting periods where there is a change in year-end, to ensure forecasts throughout the year refer to a 12-month accounting period. In line with Bartov et al. (2002), we keep observations with at least three individual earnings forecasts for the year to ensure there is an initial forecast, a reliable revision and a final forecast. The resulting sample with full data coverage in I/B/E/S is 1,397 firms and 6,199 observations. From this sample, consistent with McVay (2006), we delete observations with sales of less than £0.6m to avoid extreme outlying values of levels and changes in core earnings as sales are used as their deflator. Of the remaining observations (1,388 firms and 6,158 observations), we keep those where we can estimate unexpected core earnings. The final sample comprises 1,154 firms and 5,117 observations for tests of *MBE* and 1,033 firms and 3,609 observations for tests of *JMBE*. Tests of future unexpected changes in core earnings require one-year-ahead earnings, reducing the sample to 941 firms and 3,968 observations. To mitigate the effect of outliers in the data, we winsorise all variables at the 0.5% and 99.5% percentiles.

The first two columns of Table 1, Panel A report the annual distribution of observations for tests of *MBE*. The number of firms in each period represent on average 77% of all UK non-financial firms covered by I/B/E/S with data available for analyst forecasts and actual earnings (not tabulated). The third column of Table 1, Panel A reports the annual distribution of observations for tests of *JMBE*. The fraction of earnings surprises within the interval for measuring *JMBE* ($-£0.02 \leq SURP < £0.02$), is approximately 71% of the sample (3,609 out of 5,117) indicating a high concentration of UK firm–year observations around the earnings surprise benchmark.

[13] As Datastream recently retrieved data for accounting items up to 2005 (Datastream archive) we assessed the scope for extending our sample period post-2002. After inspecting the archive we concluded that the data was not reliable due to limited firm coverage and minor discrepancies with the old Datastream data for key variables in our study. Since these data limitations give rise to survivorship bias and errors in variables issues in the extended sample, we maintain the reported results on the original sample (1994–2002). As a robustness check we repeated our core tests on a sample extended to 2005 (pre-IFRS) using data from the archive. We obtain qualitatively similar results. The only exception pertains to tests of classification shifting for subsets of firms that are more likely to have engaged in this practice. As tests of classification shifting on a narrow subset of firms are especially prone to survivorship bias this result is not appropriate for valid inferences.

Table 1

Panel A: Frequency of meeting analyst forecasts (*MBE* = 1), frequency of just meeting analyst forecasts (*JMBE* = 1), and negative forecast errors

			MBE=1		*JMBE=1*			
	Entire sample N	*–£0.02≤ SURP<£0.02*	*N*	*Freq.(%)*	*N*	*Freq.(%)*	*Negative forecast errors (%)*	*Mean (median) forecast error*
All years	5,117	3,609	3,086	60.31	2,346	65.00	60.80	–3.44(–0.74)
1994	503	388	350	69.58	272	70.10	51.89	–2.26(–0.20)
1995	562	461	363	64.59	308	66.81	56.05	–2.42(–0.40)
1996	585	461	378	64.62	305	66.16	60.34	–2.80(–0.50)
1997	638	504	437	68.50	354	70.24	53.45	–2.03(–0.20)
1998	649	489	431	66.41	338	69.12	56.70	–2.88(–0.50)
1999	595	407	382	64.20	266	65.36	57.31	–2.62(–0.60)
2000	525	318	275	52.38	192	60.38	61.14	–4.78(–1.10)
2001	548	315	236	43.07	169	53.65	75.55	–6.08(–2.99)
2002	512	266	234	45.70	142	70.10	74.80	–5.65(–3.25)

Panel B: Real growth in UK GDP, the industrial production index and the index of total services

	Real growth in GDP	*Real growth in industrial production*	*Real growth in services*
All years	0.031	0.009	0.019
1994	0.043	0.057	–
1995	0.030	0.007	–0.011
1996	0.028	0.014	0.013
1997	0.031	0.000	0.018
1998	0.034	0.006	0.032
1999	0.030	0.025	0.027
2000	0.038	0.019	0.039
2001	0.024	–0.047	0.021
2002	0.021	–0.002	0.014

The sample consists of 5,117 observations during the period 1994–2002 for 1,154 UK firms meeting the sample selection criteria. All observations outside the interval –£0.02 ≤ *SURP* < £0.02 are deleted when *JMBE* is used, resulting in 1,033 firms and 3,609 observations. *SURP* is the earnings surprise measured as the difference between I/B/E/S actual EPS and the latest analyst forecast made prior to the earnings announcement date. The number of observations with zero or positive earnings surprises (*MBE*=1) is 3,086. The number of observations with zero or small positive earnings surprises (*JMBE*=1) is 2,346. Forecast error is the difference between I/B/E/S actual EPS and the earliest forecast for the year (following the announcement of the previous year's earnings). We obtain the real growth in GDP and in industrial production from Datastream using the following codes: UKGDP%D (annual real change in UK GDP), UKCKYWA (UK industrial production: all production industries) and UKFVQQ (index of total services) and UKCONPRCF (UK RPI). Appendix A defines the remaining variables.

5. Results

5.1. Descriptive analysis

Columns 4–7 of Table 1, Panel A report the frequency of meeting analyst forecasts (*MBE*) and just meeting analyst forecasts (J*MBE*) across years. While Matsumoto (2002) documents a monotonic increase in *MBE* from 1990 to 1997, in the UK *MBE* does not change systematically from 1994 to 1997, but there is a steady decrease starting in 1998, becoming sharper in 2000 and 2001. Over the same period *JMBE* also falls. To explore the fall in *MBE*, the next two columns of Table 1, Panel A report the frequency of negative forecast errors and the mean and median forecast error, while Panel B reports the annual real growth in the UK GDP, industrial production and the index of total services. The frequency of negative forecast errors rises sharply in 2001, reaching 75.55%. Mean and median forecast errors are increasingly negative in 2000 and 2001. The UK economy appears to have experienced a mild recession during 2001–2002. Weak macroeconomic conditions are reflected in the falling rate of real growth in the UK GDP (from 0.038 in 2000 to 0.024 in 2001 and 0.021 in 2002) and the index of total services (from in 0.039 in 2000 to 0.021 in 2001 and 0.014 in 2002) and the fall in industrial production (–0.047 in 2001 and –0.002 in 2002). Overall, the fall in *MBE* overlaps a period of macroeconomic decline and a rise in the magnitude and frequency of negative forecast errors.

Panel A of Table 2 reports descriptive statistics for key variables. Mean *MBE* and *JMBE* for the entire panel are 60% and 65%. While the average use of positive AWCAs is 49%, 53% of forecasts are guided down.[14] Mean (median) core earnings as a percentage of sales are 1.9% (5%). Mean non-recurring items are 2.1% of total sales: 4.6% when they are income-increasing and –0.9% when they are income-decreasing (from untabulated analysis). A small part of non-recurring items, 0.3% of total sales on average, comprises non-operating exceptional items (*NOEI*), while the major part, 1.8% of total sales, is other non-recurring items (*ONRI*) (e.g. operating exceptionals and other non-operating and value-irrelevant items). Annual analysis (untabulated) shows a gradual rise in *TNRI* from 0.9% of sales in 1994 to 5.6% in 2002, due mainly to the growing magnitude of *ONRI*.

Panel B of Table 2 reports Pearson (Spearman) correlations between the key variables. While the frequency of achieving analyst expectations is positively correlated with the frequency of forecasts guided down (0.080, 0.080) and unexpected core earnings (0.088, 0.144), it is not significantly associated with reporting of positive AWCAs. Reporting of positive AWCAs is negatively associated with unexpected core earnings (–0.034) and income-increasing other non-recurring items (–0.032, –0.026). The frequency of forecasts guided down is also negatively correlated with unexpected core profits (–0.048, –0.105). This evidence is consistent with managers using earnings and expectations management mechanisms as substitutes. Finally, income-increasing other non-recurring items are positively correlated with unexpected core profits (0.033, 0.029) and negatively correlated with future changes in unexpected core earnings (–0.042). These results suggest that firms with guided forecasts and unexpected core profits arising from classifications of other non-recurring items are more likely to achieve analyst expectations.

5.2. Results on accruals management vs. forecast guidance to meet analyst expectations

5.2.1. Contingency tables

Figure 1 shows the distribution of earnings surprises. We aggregate earnings surprises observations into equally sized intervals (bins). We set the size of each bin to 0.5p. As we concentrate on earnings management attempts to hit the zero earnings surprise benchmark, we aggregate all earnings surprises below –10p to the 20th bin below zero and all earnings surprises above 10p to the 20th bin above zero. Consistent with Gore et al. (2007: 132) we document a discontinuity at zero caused by the higher frequency of small positive compared with small negative surprises. This is consistent with either earnings management or forecast guidance to meet analyst expectations. Table 3, Panel A presents contingency tables examining the relation between *MBE* and indicators of positive AWCAs (*POSAWCA*) and of downward-guided analyst forecasts (*DOWN*). The results show no significant difference in *MBE* between firms with income-increasing (59.27%) versus income-decreasing or zero AWCAs (61.31%). In contrast, of firm–years where analyst forecasts are guided down (*DOWN* = 1) 64% meet analyst expectations, compared with firm–years with no downward guidance (*DOWN* = 0) when 56% meet the forecast. A chi-square test shows that the difference between the two groups is highly significant ($\chi^2 = 32.78$, $p \leq 0.001$). Inferences remain the same in moving to *JMBE* in Panel B. These initial findings suggest that UK firms are more likely to guide analyst forecasts down to

[14] Estimating downward-guided forecasts (*DOWN*) requires two years of lagged data (see equations 2 and 3). As we cannot use pre-FRS 3 observations, to avoid the effect of sample attrition on tests of forecast guidance we replace missing values of *DOWN* by an indicator of negative forecast revisions. This induces measurement error to our proxy to the extent that forecast guidance does not result in negative forecast revisions. In Appendix B we repeat our tests on a restricted sample using the initial estimate of *DOWN*. This leaves the core results unaltered.

Table 2

Panel A: Descriptive statistics for the full sample

Variable	*N*	*Mean*	*Std. dev*	*25%*	*Median*	*75%*
MBE	5,117	60.31%	48.93%	0.00%	100.00%	100.00%
JMBE	3,609	65.00%	47.70%	0.00%	100.00%	100.00%
POSAWCA	5,117	49.03%	50.00%	0.00%	0.00%	100.00%
DOWN	5,117	53.37%	49.89%	0.00%	100.00%	100.00%
CE (scaled by sales)	5,117	0.019	0.294	0.024	0.050	0.087
Δ*CE* (scales by sales)	5,117	0.003	0.188	–0.007	0.006	0.020
UCE (scaled by sales)	5,117	0.000	0.046	–0.006	0.000	0.007
$UDCE_{t+1}$ (scaled by sales)	3,968	0.000	0.029	–0.003	0.000	0.004
TNRI (scaled by sales)	5,117	0.021	0.103	0.000	0.000	0.008
NOEI (scaled by sales)	5,117	0.003	0.037	0.000	0.000	0.000
ONRI (scaled by sales)	5,117	0.018	0.098	0.000	0.000	0.006
PROFIT	5,117	90.31%	29.59%	100.00%	100.00%	100.00%
POSΔEARN	5,117	61.48%	48.67%	0.00%	100.00%	100.00%
VREARN	5,117	3.495	2.414	1.000	3.000	5.000
GROWTH	5,117	2.843	4.250	1.130	1.843	3.080
LIT	5,117	18.68%	38.98%	0.00%	0.00%	0.00%
INDPROD	5,117	0.009	0.025	0.000	0.007	0.019
SIZE	5,117	4.501	2.868	2.000	5.000	7.000

Table 2 *(continued)*

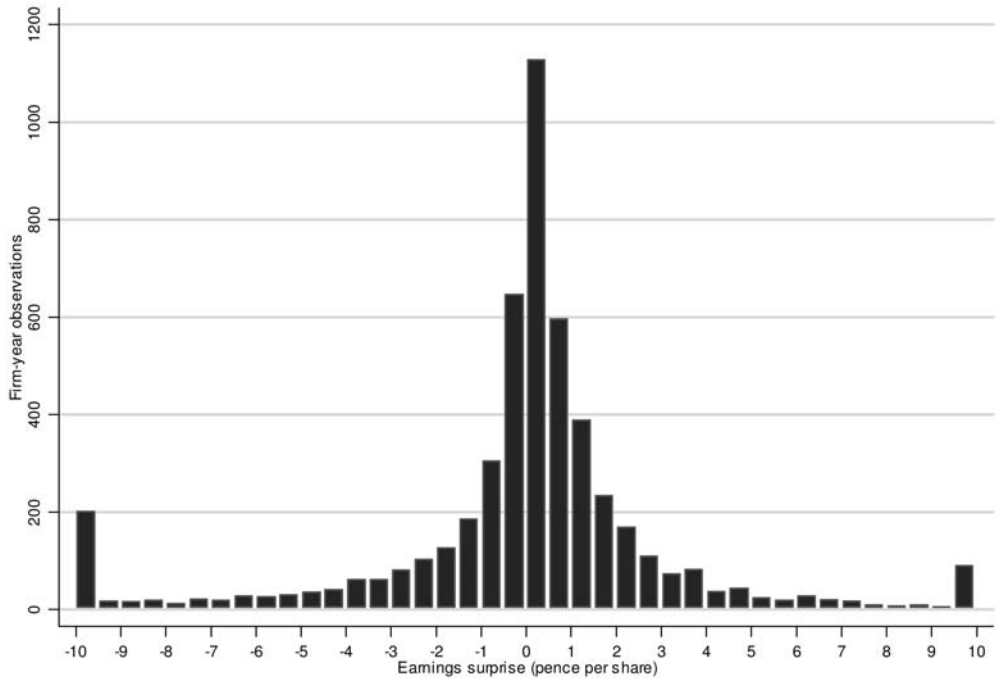
Panel B: Pearson (above the diagonal) and Spearman (below the diagonal) correlations between key variables

	MBE	*POSAWCA*	*DOWN*	*CE* (scaled by sales)	ΔCE (scaled by sales)	*UCE* (scaled by sales)	$U\Delta CE_{t+1}$ (scaled by sales)	*TNRI* (scaled by sales)	*NOEI* (scaled by sales)	*ONRI* (scaled by sales)
MBE		–0.021	0.080*	0.110*	0.116*	0.088*	0.007	–0.011	0.024*	0.006
POSAWCA	–0.021		–0.018	–0.002	0.034*	–0.010	0.005	–0.032*	0.000	–0.036*
DOWN	0.080*	–0.018		–0.015	–0.097*	–0.048*	0.021	0.013	0.011	0.005
CE (scaled by sales)	0.225*	0.019	–0.061*		0.367*	0.177*	–0.041*	–0.010	–0.034*	0.014
ΔCE (scales by sales)	0.296*	0.043*	–0.233*	0.465*		0.297*	–0.023	–0.020	–0.041*	0.012
UCE (scaled by sales)	0.144*	–0.034*	–0.105*	0.233*	0.347*		–0.026	0.012	–0.029*	0.033*
$U\Delta CE_{t+1}$ (scaled by sales)	0.002	0.022	0.003	0.034*	0.014	–0.004		–0.001	0.004	–0.011
TNRI (scaled by sales)	0.017	–0.026*	0.021	–0.096*	–0.110*	–0.012	–0.006		0.592*	0.642*
NOEI (scaled by sales)	–0.075*	–0.002	0.027*	–0.149*	–0.116*	–0.051*	0.025	0.479*		–0.205*
ONRI (scaled by sales)	0.073*	–0.032*	0.008	0.009	–0.046*	0.029*	–0.042*	0.526*	–0.261*	

* indicates significance at 10% (two-tailed).

The sample consists of 5,117 observations during the period 1994–2002 for 1,154 UK firms meeting the sample selection criteria. All observations outside the interval –£0.02 ≤ *SURP* < £0.02 are deleted when *JMBE* is used, resulting in 1,033 firms and 3,609 observations. *SURP* is the earnings surprise measured as the difference between I/B/E/S actual EPS and the latest analyst forecast made prior to the earnings announcement date. Appendix A defines the remaining variables. Calculating unexpected change in core earnings one year ahead reduces the sample to 941 firms and 3,968 observations. The 25% quartile indicates the value of the 25th percentile of the frequency distribution (i.e. the first quarter), while the 75% quartile indicates the value of the 75th percentile of the frequency distribution (i.e. the third quarter).

Figure 1
Frequency distribution of earnings surprises



The sample consists of 5,117 observations during the period 1994–2002 for 1,154 UK firms meeting the sample selection criteria. The earnings surprise is the difference between I/B/E/S actual EPS and the latest analyst forecast made prior to the earnings announcement date. We aggregate earnings surprises observations into equally sized intervals (bins). The size of each bin is 0.5p. All earnings surprises below –10p are aggregated to the 20th bin below zero and all earnings surprises above 10p are aggregated to the 20th bin above zero.

meet analyst expectations rather than use income-increasing AWCAs.

5.2.2. Multivariate analysis

Model 1 in Table 4 presents results from logistic regressions of *MBE* on indicators of positive AWCAs (*POSAWCA*) and of downward-guided analyst forecasts (*DOWN*), and a series of incentives and controls (equation 5). The Table also reports the marginal effects (economic significance) of the explanatory variables. *POSAWCA* is negative and significant (–0.187, $z = –2.99$). *POSAWCA* is also negative and significant (–0.188, $z = –3.05$) when excluding *DOWN* from the equation. Given the inclusion of *PROFIT* and *POSΔEARN* in this specification, this result suggests that, controlling for the targets of positive earnings levels and changes, firms with income-increasing AWCAs have a lower probability of meeting analyst expectations of about 4%. In a specification excluding *PROFIT* and *POSΔEARN*, the association between *POSAWCA* and *MBE* is insignificant. On the other hand, the coefficient on *DOWN* is positive and highly significant (0.744, $z = 11.07$), consistent with downward-guided forecasts increasing the probability of meeting analyst expectations by approximately 18%. *DOWN* remains positive and significant when excluding *POSAWCA* from the equation (0.743, $z = 11.09$) and in a specification excluding *PROFIT* and *POSΔEARN* (0.297, $z = 5.03$). With the exception of *LIT* and *SIZE* all other variables are significant and in accordance with the predicted signs.[15] Repeating the tests using price volatility (market β) to proxy for risk of shareholder litigation gives an insignificant coefficient on *LIT*. These results are consistent with the less litigious UK business environment. In a specification excluding *PROFIT* and *POSΔEARN*, *SIZE* is positive and significant, consistent with

[15] In a specification that includes MBE_{t-2} and MBE_{t-3} (735 firms, 2,544 observations), while the coefficient on MBE_{t-1} remains positive and significant, the coefficients on additional lags are insignificant. This finding suggests that only last period performance (i.e. achieving analyst expectations in the previous year) affects a firm's ability to meet analyst expectations in the current period.

Table 3
The association between the probability of meeting expectations (*MBE*) and of just meeting expectations (*JMBE*) with earnings management and forecast guidance.

Panel A: Contingency tables classifying observations based on: (1) an indicator of meeting analyst forecasts (*MBE*); and (2) indicators of positive abnormal working capital accruals (*POSAWCA*) and of downward-guided analyst forecasts (*DOWN*).

	POSAWCA = 0	*POSAWCA* = 1	*DOWN* = 0	*DOWN* = 1
MBE = 0	1,009 (38.69%)	1,022 (40.73%)	1,047 (43.88%)	984 (36.03%)
MBE = 1	1,599 (61.31%)	1,487 (59.27%)	1,339 (56.12%)	1,747 (63.97%)
Total	2,608	2,509	2,386	2,731
	$\chi^2 = 2.23$ $p = 0.135$		$\chi^2 = 32.78$ $p = \leq 0.001$	

Panel B: Contingency tables classifying observations based on: (1) an indicator of just meeting analyst forecasts (*JMBE*); and (2) indicators of positive abnormal working capital accruals (*POSAWCA*) and of downward-guided analyst forecasts (*DOWN*).

	POSAWCA = 0	*POSAWCA* = 1	*DOWN* = 0	*DOWN* = 1
JMBE = 0	622 (34.16%)	641 (35.85%)	639 (37.52%)	624 (32.74%)
JMBE = 1	1,199 (65.84%)	1,147 (64.15%)	1,064 (62.48%)	1,282 (67.26%)
Total	1,821	1,788	1,703	1,906
	$\chi^2 = 1.15$ $p = 0.286$		$\chi^2 = 9.05$ $p = 0.003$	

The sample consists of 5,117 observations during the period 1994–2002 for 1,154 UK firms that meet the sample selection criteria. Appendix A defines the variables. All observations outside the interval –£0.02 ≤ *SURP* < £0.02 are deleted when *JMBE* is used, resulting in 1,033 firms and 3,609 observations. *SURP* is the earnings surprise measured as the difference between I/B/E/S actual EPS and the latest analyst forecast made prior to the earnings announcement date.

larger firms having stronger incentives to meet analyst expectations.[16]

In Model 2 of Table 4 we repeat the analysis using *JMBE* instead of *MBE* (equation 6). *POSAWCA* is now marginally significant (–0.132, $z = –1.81$), while *DOWN* remains positive and significant at 1% (0.492, $z = 6.22$). Taken together, the results in Table 4 suggest that unlike income-increasing AWCAs, earnings forecast guidance is a common mechanism that UK firms use to avoid negative earnings surprises.

As an additional test of earnings forecast guidance, we follow Bartov et al. (2002) and test the effect of forecast revisions on the sign of earnings surprises. Bartov et al. (2002) argue that in the absence of a forecast revision, the earnings surprise and the quarterly forecast error have the same sign. Accordingly, a negative forecast error that, due to

[16] In addition to litigation risk, value-relevance of earnings and the firm's growth prospects, Matsumoto (2002) examines institutional ownership as a managerial incentive to avoid negative earnings surprises. To the extent institutional investors focus on short-term earnings, and especially on earnings surprises, as they represent a basic metric on which to base trades, managers of firms with higher institutional ownership are more likely to take actions to meet analyst expectations. In line with her prediction, Matsumoto finds that high percentages of institutional ownership increase the probability of meeting or beating analyst expectations. As data on institutional ownership of UK firms are not available for our entire sample, we repeated our core tests adding a control for the percentage of shares held by institutions on a subset of 375 firms (635 observations) that had available ownership structure data and met our sample selection criteria. We are grateful to Dr. Steven Young, Lancaster University, for providing the ownership structure data. On this subset, consistent with Matsumoto (2002), the association between institutional ownership and *MBE* is positive, but only marginally significant (0.747, $z = 1.75$). Future research could assess whether this weak evidence of an institutional impact is due to the effect of different types of institutional holdings in UK firms. While *POSAWCA* is not significant, *DOWN* remains positive and significant (1.056, $z = 5.12$).

Table 4
Logit analysis of the probability of meeting analyst forecasts as a function of indicators of positive abnormal working capital accruals (*POSAWCA*) and of downward-guided analyst forecasts (*DOWN*) and a series of other incentives and controls.

$$Prob(MBE=1|X) = F(\beta_0 + \beta_1 POSAWCA_{i,t} + \beta_2 DOWN_{i,t} + \beta_3 PROFIT_{i,t} + \beta_4 POS\Delta EARN_{i,t} + \beta_5 VREARN_{i,t} + \beta_6 GROWTH_{i,t} + \beta_7 LIT_{i,t} + \beta_8 INDPROD_{i,t} + \beta_9 SIZE_{i,t} + \beta_{10} MBE_{i,t-1} + u_{i,t}) \quad (5)$$

$$Prob(JMBE=1|X) = F(\beta_0 + \beta_1 POSAWCA_{i,t} + \beta_2 DOWN_{i,t} + \beta_3 PROFIT_{i,t} + \beta_4 POS\Delta EARN_{i,t} + \beta_5 VREARN_{i,t} + \beta_6 GROWTH_{i,t} + \beta_7 LIT_{i,t} + \beta_8 INDPROD_{i,t} + \beta_9 SIZE_{i,t} + \beta_{10} MBE_{i,t-1} + u_{i,t}) \quad (6)$$

where $F(\beta' X) = \dfrac{e^{\beta' X}}{1+e^{\beta' X}}$

Variable	Predicted sign	***MBE*** Coefficient (*z*-stat)	Marginal effect	***JMBE*** Coefficient (*z*-stat)	Marginal effect
Intercept		–1.829***		–1.336	
		(–2.08)		(–1.58)	
POSAWCA	?	–0.187***	–0.044	–0.132*	–0.030
		(–2.99)		(–1.81)	
DOWN	+	0.744***	0.176	0.492***	0.111
		(11.07)		(6.22)	
PROFIT	+	1.293***	0.312	0.432**	0.102
		(9.84)		(2.29)	
POSΔEARN	+	1.253***	0.296	0.887***	0.205
		(17.94)		(10.67)	
VREARN	+	0.035**	0.008	0.022	0.005
		(2.41)		(1.32)	
GROWTH	+	0.019**	0.004	0.020*	0.004
		(2.27)		(1.97)	
LIT	+	–0.110	–0.026	0.129	0.029
		(–0.20)		(0.21)	
INDPROD	+	7.339***	1.740	5.620***	1.262
		(5.61)		(3.60)	
SIZE	+	0.013	0.003	0.033**	0.007
		(1.08)		(2.35)	
MBE_{t-1}	+	0.320***	0.076	0.288***	0.065
		(4.98)		(3.79)	
Industry dummies		Yes		Yes	
Log likelihood		–3,039.14		–2,216.47	
Chi-square		643.84		220.84	
p-value		<0.001		<0.001	
Correctly classified		68.88%		66.99%	
No. of observations:					
Meet		3,086		2,346	
Did not meet		2,031		1,263	
Total		5,117		3,609	

*/**/*** indicate significance at 10%/5%/1% (two-tailed). z-statistics in parentheses are based on White standard errors. The marginal effects are computed as $\beta \dfrac{e^{\beta' X}}{(1+e^{\beta' X})^2} \quad \beta' X$ where $\beta' X$ is computed at the mean values of X (explanatory variables).

The sample consists of 5,117 observations during the period 1994–2002 for 1,154 UK firms meeting the sample selection criteria. Appendix A defines the variables. All observations outside the interval –£0.02 ≤ SURP < £0.02 are deleted when *JMBE* is used, resulting in 1,033 firms and 3,609 observations. *SURP* is the earnings surprise measured as the difference between I/B/E/S actual EPS and the latest analyst forecast made prior to the earnings announcement date.

a sufficiently large downward revision, results in a positive earnings surprise is consistent with earnings forecast guidance, whereas a zero or positive forecast error that, due to a sufficiently large upward forecast revision, results in a negative earnings surprise is inconsistent with earnings forecast guidance. Bartov et al. argue that absent management intervention, the proportion of observations where the revision offsets the sign of the earnings surprise should be identical between cases with negative and positive errors. Results of our additional tests show that the frequency of negative forecast errors ending with zero or positive earnings surprises (28%) is substantially higher than the frequency of positive or zero forecast errors ending with negative earnings surprises (7%). This evidence is consistent with earnings forecast guidance to meet analyst expectations, lending further credence to our core findings.

5.3. Results on classification shifting to meet analyst expectations

5.3.1. Main results

Table 5 reports the results of regressions of unexpected core earnings on non-recurring items for the entire sample (1,154 firms, 5,117 observations) and three subsets of firms: (a) firms with income increasing non-recurring items (962 firms, 2,803 observations); (b) firms where classifications of non-recurring items allow managers to just hit analyst forecasts (481 firms, 761 observations); and (c) firms where classifications of small non-recurring items allow managers to just hit analyst forecasts (186 firms, 225 observations). Panel A reports the results of equation (9). To the extent UK firms engage in classification shifting, we expect the association between income-increasing non-recurring items and unexpected core earnings to be positive and more profound within the subsets of firms that are increasingly likely to engage in classification shifting to meet analyst expectations. We find no evidence of a significant association between *TNRI* and unexpected core earnings (*UCE*), even focusing on firms where classifications of small total non-recurring items allow them to just hit analyst forecasts. Contrary to the findings of McVay (2006) for US firms, these results suggest that income-increasing total non-recurring items are not systematically related to the variation in unexpected core earnings and thus that classification shifting is not common practice among UK firms.

Some firms might have greater incentives or ability to use classification shifting to meet analyst expectations. Prior research in the UK suggests that larger firms are more likely to engage in classificatory income smoothing to reduce the costs of public visibility (Beattie et al., 1994). Disclosures of alternative earnings metrics are pervasive amongst the 500 largest (based on market capitalisation) UK listed non-financial firms (Choi et al., 2005). Larger firms also experience more frequent structural changes, which often give rise to non-recurring items. We therefore look for evidence of classification shifting on a subset of larger firms. We consider larger firms as those in the highest three quintiles of lagged market capitalisation so that our subset of larger firms resembles the sample of Choi et al. (2005). Within this subset the frequency of zero non-recurring items (8%) is substantially lower than that for the remaining firms in the sample (16%), consistent with larger firms disclosing non-recurring items more frequently. Repeating equation (9) for larger firms where classifications of small total non-recurring items allow them to just hit analyst forecasts (113 firms, 137 observations), *TNRI* remains insignificant.

Panel B of Table 5 reports the results of equation (11) on the separate components of *TNRI* (*NOEI* and *ONRI*). As other non-recurring items offer a more flexible device for classification shifting to meet analyst expectations than non-operating exceptional items, we expect the coefficient on *ONRI* to be positive. On the entire sample, firms with income-increasing other non-recurring items (962 firms, 2,927 observations) and firms where classifications of other non-recurring items allow managers to just hit analyst forecasts (489 firms, 761 observations), we find no evidence of a significant association between *UCE* and income-increasing *ONRI*. However, for firms where classifications of small other non-recurring items allow them to just hit the forecast (201 firms, 244 observations), *ONRI* is positive and significant (0.597, t=2.88). This is due to larger firms within this sub-sample, as for larger firms that would have just missed the target without classifications of small non-recurring items (121 firms, 148 observations) the coefficient on *ONRI* is positive and significant (0.868, t=2.06). For these firms, a one standard deviation increase in other non-recurring items results in an increase in unexpected core earnings (scaled by sales) of 26 basis points (0.868, multiplied by 0.003, the standard deviation of other non-recurring items for this sample). Not surprisingly, as the sample is narrowed to focus on firms that have greater opportunity to engage in classification shifting, the adjusted R^2 increases from to 0.2% to 1.3%. As expected, we find no evidence of a positive association between *UCE* and income-increasing *NOEI* for any subset of firms.

Summarising, the results in Table 5 provide evidence of a positive association between unexpected core earnings and small other non-recurring items for larger firms that met the analyst forecast by up to two pence per share, when otherwise they would have just missed the target. This evidence is

Table 5
Unexpected core earnings and income-increasing non-recurring items

Panel A: Regression of unexpected core earnings on total non-recurring items as a percentage of sales, for the entire sample and subsets of firms that are increasingly likely to use classification shifting to meet analyst expectations.

$$UCE_{i,t} = \delta_0 + \delta_1 TNRI_{i,t} + u_{i,t}$$

Variable	Predicted sign	*Entire sample*	*Income-increasing TNRI*	*JUSTMET with TNRI*	*JUSTMET with Small TNRI*	*JUSTMET with Small TNRI (larger firms)*
Intercept		0.000 (0.12)	0.001 (0.78)	0.000 (–0.12)	–0.003 (–0.99)	–0.003 (–0.66)
TNRI	+	0.014 (1.08)	0.012 (0.89)	0.014 (0.39)	0.506 (0.80)	0.624 (0.98)
Adjusted R^2		0.001	0.001	0.001	0.001	0.001
Number of firms		1,154	962	481	186	113
Number of observations		5,117	2,803	761	225	137

Table 5
Unexpected core earnings and income-increasing non-recurring items *(continued)*

Panel B: Regression of unexpected core earnings on non-operating exceptional and other non-recurring items as a percentage of sales for the entire sample and subsets of firms that are increasingly likely to use classification shifting to meet analyst expectations.

$$UCE_{i,t} = \delta_0 + \delta_{1a} NOEI_{i,t} + \delta_{2b} ONRI_{i,t} + u_{i,t}$$

Variable	Predicted sign	*Entire sample*	*Income-increasing ONRI*	*JUSTMET with ONRI*	*JUSTMET with small ONRI*	*JUSTMET with small ONRI (larger firms)*
Intercept		0.000	0.002**	0.001	–0.001	–0.001
		(0.27)	(2.47)	(0.47)	(–0.59)	(–0.22)
NOEI	+	–0.087**	–0.021	0.014	–0.008	–0.026
		(–2.12)	(–0.69)	(0.35)	(–0.17)	(–0.64)
ONRI	+	0.030	0.020	0.023	0.597***	0.868**
		(1.60)	(1.10)	(0.58)	(2.88)	(2.06)
Adjusted R^2		0.009	0.002	0.002	0.006	0.013
Number of firms		1,154	962	489	201	121
Number of observations		5,117	2,927	761	244	148

*/**/*** indicate significance at 10%/5%/1% (two-tailed). *t*-statistics in parentheses are based on robust standard errors clustered by year.
The entire sample consists of 5,117 observations during the period 1994–2002 for 1,154 UK firms meeting the sample selection criteria. Appendix A defines the variables. *JUSTMET with TNRI* includes observations where the earnings surprise (*SURP*) is in the interval –£0.02 ≤ *SURP* < £0.02, total non-recurring items are income-increasing (*TNRI*>0) and *SURP* – *TNRI* < 0. *JUSTMET with Small TNRI* includes observations where the *SURP* is in the interval –£0.02 ≤ *SURP* < £0.02, *TNRI*>0, *TNRI* is less than median *TNRI* for firms with positive *TNRI* and *SURP* – *TNRI* < 0. *JUSTMET with ONRI* includes observations where *SURP* is in the interval –£0.02 ≤ *SURP* < £0.02, other non-recurring items are income-increasing (*ONRI*>0) and *SURP* – *ONRI* < 0. *JUSTMET with Small ONRI* includes observations where the *SURP* is in the interval –£0.02 ≤ *SURP* < £0.02, *ONRI*>0, *ONRI* is less than median *ONRI* for firms with positive *ONRI* and *SURP* – *ONRI* < 0. Larger firms are those in the highest three quintiles of lagged market capitalisation.

consistent with a subset of larger firms engaging in classification shifting of small core expenses to operating exceptional or other non-recurring items to just meet analyst expectations. On the other hand, a positive association between *UCE* and *ONRI* may also result from immediate efficiency gains due to rationalising operations. To distinguish between the two scenarios, we next examine the association between non-recurring items and future profitability.

Table 6 reports results from regressions of future changes in unexpected core earnings ($U\Delta CE$) on non-recurring items for the entire sample and the three subsets of firms that are increasingly likely to engage in classification shifting to meet analyst expectations. To the extent UK firms engage in classification shifting to meet analyst expectations, we expect the association between non-recurring items and changes in unexpected core earnings one year ahead to be negative and more profound for the sub-samples. Panel A reports the results of equation (10). For firms where classifications of small total non-recurring items allow them to just hit the forecast (155 firms, 178 observations), *TNRI* is negative and significant (–0.553, t=–2.28). The negative association pertains to larger firms within this subset (94 firms, 113 observations), as for these firms *TNRI* is significantly negative and higher in magnitude (–1.160, t = –3.02).[17] This result is more likely due to the effect of small income-increasing other non-recurring items, as for larger firms that just hit the analyst forecast with classifications of these items (Panel B, 102 firms, 120 observations) *ONRI* is negative (–1.060, t=–1.68). Combined with the evidence in Table 5, this finding suggests that for larger firms that just meet analyst forecasts by shifting small core expenses to other non-recurring items, a one standard deviation increase in other non-recurring items is expected to increase unexpected core earnings by 26 basis points and have a subsequent incremental reversal of about 22 basis points (–1.060 multiplied by 0.002) one year ahead. Almost 85% (22/26) of the increase in unexpected core earnings reverses in the subsequent period, as these expenses recur. Taken together, the results in Tables 5 and 6 provide evidence that a subset of larger firms, roughly 10% of sample firms (121/1154), engage in classification shifting of small other non-recurring items to just meet analyst expectations.[18]

Despite the increase in adjusted R^2 for firms that are more likely to engage in classification shifting, the explanatory power for all regressions in Tables 5 and 6 is low (0.01%–5.1%). In similar regressions, McVay (2006: 518–521) also reports low adjusted R^2s (0.01%–8.5%), despite her larger dataset and the stronger evidence of an association between non-recurring items and unexpected core profits for US firms. The low explanatory power of these tests is due to the two-stage process that we follow, after McVay (2006). For example, in the first stage given by equation (7) we model expected core earnings by industry–year; in the second stage (equation 9) we run a simple regression to test the association between unexpected core earnings and non-recurring items. This two-stage design yields a low explanatory power in the second stage, but our overall ability to explain variation in core earnings is determined by both the first and second stages. The low explanatory power of the second stage is also due to the positive (negative) association between unexpected core profits and non-recurring items pertaining to a small subset of larger firms.

5.3.2. Additional analysis

For a complete assessment of the implications of non-recurring items for firms that are most likely to be engaging in classification shifting to meet analyst expectations, we test the association between non-recurring items and future operating cash flows:

$$FutureCFO_{i,t} = \lambda_0 + \lambda_1 CE_{i,t} + \lambda_2 NOEI_{i,t} + \lambda_3 ONRI_{i,t} + \lambda_4 ACCRUALS_{i,t} + \lambda_5 GROWTH_{i,t} + u_{i,t} \quad (13)$$

where *FutureCFO* is operating cash flows summed over three years following year t and scaled by sales. If non-recurring items predict future cash flows, the precise timing of this effect in terms of the window for measuring future cash flows is uncertain. If managers shift core expenses to non-recurring items to meet expectations, they can use strategic disclosures to show higher core earnings in the short term, but they cannot avoid negative implications in the long term. As a result, we sum operating cash flows over three years to ensure we capture a substantial portion of the predictive power of non-recurring items. We split total non-recurring items into *NOEI* and *ONRI* to examine the separate effects of the two components. Similar to Doyle et al. (2003), we control

[17] As tests of future unexpected changes in core earnings require one-year-ahead data, reducing the sample to 941 firms and 3,968 observations, these results are not directly comparable with results in Table 5, which are calculated on the original sample of 1,154 firms and 5,117 observations. Repeating the analysis in Table 5 on the subset of 3,968 observations leaves the core findings unaltered.

[18] An alternative approach to clustering by year to control for cross sectional dependence is to use Fama and MacBeth (1973) across year t-statistics. However, as we run equations (9)–(12) on gradually narrower subsets of firms (the last subset includes 16 observations on average per year) the Fama–MacBeth statistics may bias results against finding an association between income-increasing non-recurring items and unexpected core profits. Indeed this alternative estimation yields weaker evidence of classification shifting within the subset of larger firms that just hit analyst forecast using small income-increasing other non-recurring items.

Table 6
Unexpected changes in core earnings and income-increasing, non-recurring items

Panel A: Regression of future unexpected changes in core earnings on total non-recurring items as a percentage of sales for the entire sample and subsets of firms that are increasingly likely to use classification shifting to meet analyst expectations.

$$U\Delta CE_{i,t+1} = \delta_0 + \delta_1 TNRI_{i,t} + u_{i,t}$$

Variable	Predicted sign	*Entire sample*	*Income-increasing TNRI*	*JUSTMET with TNRI*	*JUSTMET with Small TNRI*	*JUSTMET with Small TNRI (larger firms)*
Intercept		0.000 (0.05)	–0.001 (–0.56)	0.001 (0.46)	0.002 (1.22)	0.003 (1.28)
TNRI	–	0.000 (–0.01)	0.002 (0.14)	0.016 (0.55)	–0.553** (–2.28)	–1.160*** (–3.02)
Adjusted R^2		0.000	0.000	0.003	0.008	0.051
Number of firms		941	796	401	155	94
Number of observations		3,968	2,134	609	178	113

Table 6
Unexpected changes in core earnings and income-increasing, non-recurring items *(continued)*

Panel B: Regression of future unexpected changes in core earnings on non-operating exceptional and other non-recurring items as a percentage of sales for the entire sample and subsets of firms that are increasingly likely to use classification shifting to meet analyst expectations.

$$U\Delta CE_{i,t+1} = \delta_0 + \delta_{1a} NOEI_{i,t} + \delta_{2b} ONRI_{i,t} + u_{i,t}$$

Variable	Predicted sign	*Entire sample*	*Income-increasing ONRI*	*JUSTMET with ONRI*	*JUSTMET with Small ONRI*	*JUSTMET with Small ONRI (larger firms)*
Intercept		0.000 (0.29)	–0.001 (–1.14)	0.001 (0.68)	0.001 (0.80)	0.002 (0.84)
NOEI	–	0.028 (1.53)	–0.004 (–0.11)	–0.002 (–0.12)	–0.054 (–0.77)	–0.064 (–1.21)
ONRI	–	–0.012 (–1.14)	–0.007 (–0.64)	–0.006 (–0.38)	–0.124 (–0.27)	–1.060* (–1.68)
Adjusted R^2		0.002	0.001	0.001	0.002	0.019
Number of firms		941	794	402	161	102
Number of observations		3,968	2,262	600	188	120

*/**/*** indicate significance at 10%/5%/1% (two-tailed). t-statistics in parentheses are based on robust standard errors clustered by year.
The original sample consists of 5,117 observations during the period 1994–2002 for 1,154 UK firms meeting the sample selection criteria. Calculating unexpected change in core earnings requires one year ahead of data reducing the sample to 941 firms and 3,968 observations. Appendix A defines the variables. *JUSTMET with TNRI* includes observations where the earnings surprise (*SURP*) is in the interval –£0.02 ≤ *SURP* < £0.02, total non-recurring items are income-increasing (*TNRI*>0) and *SURP* – *TNRI* < 0. *JUSTMET with Small TNRI* includes observations where the *SURP* is in the interval –£0.02 ≤ SURP < £0.02, *TNRI*>0, *TNRI* is less than median *TNRI* for firms with positive *TNRI* and *SURP* – *TNRI* < 0. *JUSTMET with ONRI* includes observations where *SURP* is in the interval –£0.02 ≤ *SURP* < £0.02, other non-recurring items are income-increasing (*ONRI*>0) and *SURP* – *ONRI* < 0. *JUSTMET with Small ONRI* includes observations where the *SURP* is in the interval –£0.02 ≤ *SURP* <£0.02, *ONRI*>0, *ONRI* is less than median *ONRI* for firms with positive *ONRI* and *SURP* – *ONRI* < 0. Larger firms are those in the highest three quintiles of lagged market capitalisation.

for *GROWTH* and *ACCRUALS*. Higher-growth firms have higher changes in working capital, which may affect future cash flows. Also higher-growth firms tend to experience structural events, which are the major source of non-operating exceptional items. We add accruals as prior research shows that they predict future cash flows (Dechow, 1994; Sloan, 1996; Barth et al., 2001). If an income-increasing non-recurring item is booked as an accrual (e.g. asset impairment, provision for reorganisation costs) in the current period and turns into a cash outflow in a future period, then accruals reversal could yield a negative association between non-recurring items and future operating cash flows.

Similar to equations (11) and (12), we estimate equation (13) for the entire sample and four subsets of firms: (a) firms with income-increasing other non-recurring items; (b) firms where classifications of other non-recurring items allow managers to just hit analyst forecasts; (c) firms where classifications of small other non-recurring items allow managers to just hit analyst forecasts; and (d) larger firms from subset three (the highest three quintiles of lagged market capitalisation). If, consistent with evidence in Tables 5 and 6, managers of larger firms engage in classification shifting of small core expenses to other non-recurring items to just meet analyst expectations, then we expect the coefficient on *ONRI*, λ_3, to be negative for the fourth subset of firms, capturing the effect of small recurring expenses on these firms' operating cash flows in subsequent accounting periods.

For equation (13), aggregating operating cash flows three years ahead reduces the sample to 863 firms and 3,427 observations. We mitigate sample attrition by collecting data on operating cash flows for 2003 and 2004. Because the dependent variable in equation (13) aggregates operating cash flows over three years, it involves overlapping observations. To address serial correlation in error terms further to cross-sectional dependence, we estimate standard errors clustered by firm and year.[19] Panel A of Table 7 reports the regression results. The results show that other non-recurring items are not associated with future cash flows for the entire sample, the subset of firms with income-increasing *ONRI* and the subset of firms just hitting analyst forecasts with income-increasing *ONRI*. However, for firms that just hit analyst forecasts using classifications of small income-increasing *ONRI* (subset 3, 140 firms, 161 observations) and larger firms within this subset (subset 4, 86 firms, 98 observations), other non-recurring items are recurring and consume cash in the future. The coefficients on *ONRI* are negative and significant for both subset 3 (–16.739, t=–2.69) and subset 4 (–13.417, t=–2.76). As expected, future operating cash flows generally decline with *ACCRUALS*. Since *CE*, *NOEI* and *ONRI* capture net income, the accrual result shows that given net income, a relatively high level of accruals predicts lower future cash flows, consistent with the results from prior research (Dechow, 1994; Sloan, 1996; Barth et al., 2001). More important, *ACCRUALS* control for the mechanical relation between expenses that accrue in the current period and turn into cash in the future periods when they reverse. Therefore, the coefficients on *ONRI* capture the incremental cash outflows in the future beyond the reversing of accrued expenses. Inspecting the magnitude of the coefficients, *ONRI* is significantly higher in absolute value than *CE* for the two subsets of firms (3,202 and 3.742 respectively). This is most likely due to the small size of other non-recurring items within the two subsets of firms, rather than to a higher degree of permanence of these items compared to core earnings. Based on standardised regression coefficients the degree of permanence of core earnings is substantially higher than that of *ONRI* for both subsets of firms. A one standard deviation increase in *CE* for the third (fourth) subset of firms increases future operating cash flows by 56% (63%), while a one standard deviation increase in *ONRI* for the third (fourth) subset of firms decreases future operating cash flows by 11% (10%).

Overall, results in Table 7 show that even though, on average, non-recurring items do not convey information about future operating performance, for firms that hit the analyst target using classifications of small other non-recurring items, these items predict future cash outflows. These results reinforce our evidence of larger firms engaging in classification shifting of small core expenses to operating exceptional or other non-recurring items to just meet analyst expectations.

[19] Petersen (2007) suggests that when a model suffers from both serial correlation in the disturbance terms and cross-sectional dependence, standard errors clustered on two dimensions (time and firm) are unbiased and produce correctly sized intervals whether the firm effect is permanent or temporary. We make similar inferences when we estimate the equations using the Prais-Winsten estimator (feasible generalised least squares), which corrects for cross-sectional correlation and autocorrelated and heteroscedastic residuals. An alternative approach to alleviating cross sectionally and serially correlated error terms is to use Fama and MacBeth (1973) across year t-statistics and multiply the traditional standard error by the Newey–West adjustment factor similar to Doyle et al. (2003). However, as we run equation (13) on gradually narrower subsets of firms (the last subset includes 12 observations on average per year) the Fama–MacBeth statistics may bias results against finding an association between income-increasing non-recurring items and future cash flows. Indeed this alternative estimation yields weaker evidence of a negative association between other non-recurring items and future cash flows for firms that just hit analyst forecast using small income-increasing other non-recurring items.

Table 7
Regressions of future operating cash flows on current core earnings, non-recurring items and a set of control variables

$$FutureCFO_{i,t} = \lambda_0 + \lambda_1 CE_{i,t} + \lambda_2 NOEI_{i,t} + \lambda_3 ONRI_{i,t} + \lambda_4 ACCRUALS_{i,t} + \lambda_5 GROWTH_{i,t} + u_{i,t}$$

Variable	*Entire sample*	*Income-increasing ONRI*	*JUSTMET with ONRI*	*JUSTMET with Small ONRI*	*JUSTMET with Small ONRI (larger firms)*
Intercept	0.215***	0.200***	0.107***	0.110***	0.066***
	(8.74)	(8.40)	(3.40)	(2.74)	(2.75)
CE	1.628***	1.700***	2.328***	3.202***	3.742***
	(12.08)	(17.97)	(4.64)	(7.01)	(12.34)
NOEI	–0.199	–0.694	–0.806**	–0.440	–0.233
	(–0.65)	(–2.96)	(–2.46)	(–0.58)	(–0.43)
ONRI	–0.253	–0.128	–0.002	–16.739***	–13.417***
	(–0.93)	(–0.45)	(–0.01)	(–2.69)	(–2.76)
ACCRUALS	–1.502***	–1.388***	–2.490***	–1.835***	–2.250***
	(–5.16)	(–4.45)	(–4.46)	(–13.77)	(–6.09)
GROWTH	–0.003	0.001	–0.001	–0.003	–0.004
	(–1.51)	(0.42)	(–0.33)	(–0.78)	(–0.97)
Adjusted R^2	0.5508	0.6406	0.6638	0.6312	0.7668
Number of firms	863	703	328	140	86
Number of observations	3,427	1,934	495	161	98

*/**/*** indicate significance at 10%/5%/1% (two-tailed). *t*-statistics in parentheses are based on robust standard errors clustered by year and firm to control for cross-sectional dependence and heteroskedastic and autocorrelated residuals.
The original sample consists of 5,117 observations during the period 1994–2002 for 1,154 UK firms meeting the sample selection criteria. Appendix A defines the variables. Calculating *FutureCFO* requires three years ahead of data, reducing the sample to 863 firms and 3,427 observations. *JUSTMET with ONRI* includes observations where *SURP* is in the interval –£0.02 ≤ *SURP* < £0.02, other non-recurring items are income-increasing (*ONRI*>0) and *SURP* – *ONRI* < 0. *JUSTMET with small ONRI* includes observations where the *SURP* is in the interval –£0.02 ≤ *SURP* < £0.02, *ONRI*>0, *ONRI* is less than median *ONRI* for firms with positive *ONRI* and *SURP* – *ONRI* < 0. Larger firms are those in the highest three quintiles of lagged market capitalisation.

6. Conclusion

This paper sheds light on the mechanisms UK firms use to meet analyst expectations. We examine earnings forecast guidance and two earnings management mechanisms. The results of our investigation over the period 1994–2002 show that downward-guided forecasts increase the probability of meeting analyst expectations. Furthermore, within a small subset of larger firms (based on market capitalisation), we find evidence consistent with classification shifting of small other non-recurring items to hit analyst earnings forecasts. In particular, for larger firms that would have just missed the target without classifications of other non-recurring items, we find that other non-recurring items are associated with an abnormal rise in core profits in the current period, an abnormal decline in core earnings in the subsequent period and operating cash outflows three years ahead. This evidence of classification shifting should be treated with caution as it pertains only to a narrow subset of firms, where the explanatory power of non-recurring items for excess core earnings is low and is weaker in some robustness tests. With regard to the second earnings management mechanism, we find no evidence of a positive association between income-increasing AWCAs and the probability of meeting analyst expectations. Overall, our results suggest that UK firms are more likely to engage in earnings forecast guidance or, for a subset of larger firms, in classification shifting than in accruals management to meet analyst expectations. Our results corroborate the survey evidence of Choi et al. (2006) that UK managers are more likely to engage in earnings forecast guidance to meet earnings benchmarks than to bear the costs of deploying income-increasing discretionary accounting choices.

Our results have important implications for both investors and accounting standard setters. Investors view a zero or positive earnings surprise as evidence of a well-managed firm, able to both predict and deliver future earnings. Graham et al. (2005: 5) remark that, 'The severe stock market reactions to small EPS misses can be explained as evidence that the market believes that most firms can "find the money" to hit earnings targets. Not being able to find one to two cents to hit the target might be interpreted as evidence of hidden problems at the firm.' The market therefore appears to expect a certain degree of earnings or expectations management to hit the target. To the extent UK firms guide analyst forecast down or engage in classification shifting to make the target attainable, the question that arises is whether investors take this into consideration by discounting the market reward (if any) to meeting analyst expectations.

With regard to accounting standard setters, our results suggest that under an FRS 3 regime, UK firms are unlikely to engage in earnings management through accruals. This is in line with the original intention of the UK regulatory bodies in the early 1990s to reduce opaque practices of earnings manipulation. Moreover, while prior research suggests that misclassifications of extraordinary items were pervasive before the introduction of FRS 3 (Smith, 1992), our results show that the practice of classification shifting through non-recurring items was not common post-FRS 3. FRS 3's rigorous transparency requirements, especially with regard to large visible transitory items, contributed to this effect, as they helped users to ascertain with greater confidence the nature of the items firms classify as non-recurring, increasing the cost of using classification shifting to manage earnings. While classification shifting was not widespread post-FRS 3, we find evidence consistent with the practice within a subset of larger UK firms. This evidence suggests that despite the transparency restraints of FRS 3, there was still scope for shifting relatively small recurring expenses to operating exceptional and other non-recurring items. Future research should assess whether investors can detect classification shifting attempts and impound their full implications for stock prices. A further interesting avenue for future research would be to investigate the effect of large audit firms on the use of classification shifting to achieve analyst expectations. This avenue could extend to earnings forecast guidance. A factor that needs to be considered is the extent to which these mechanisms raise auditor suspicion, especially in view of their subtle nature and the role of auditing relative to other corporate governance mechanisms (e.g. institutional ownership, managerial ownership, the monitoring action of non-executive directors, the board of directors and the audit committee).

Appendix A
Definition of variables

Variable	*Definition*
ACCRUALS	Accruals scaled by sales. Accruals is the difference between adjusted ordinary earnings (DS210) and operating cash flows from the cash flows statement (DS1015).
AF0	Latest forecast for the year made prior to the earnings announcement date.
ATO	Asset turnover defined as total sales over average net operating assets [$(NOA_t+NOA_{t-1})/2$]. *NOA* (net operating assets) is the difference between operating assets and operating liabilities. Operating assets is total assets (DS392) minus cash and cash equivalent (DS375). Operating liabilities is total assets (DS392) less total debt (DS1301), total equity (DS307) and minority interest (DS176).
CE	Core earnings calculated as I/B/E/S actual EPS multiplied by the weighted average number of shares (both unadjusted for splits to derive the historical figures) and scaled by total sales (DS104).
CRET	Excess monthly return cumulated from the month following the year *t*-1 earnings announcement to the month of the year *t* earnings announcement. Excess return is firm return less the market return using the FTSE All Shares Index. Returns are collected from the LSPD 2002.
DOWN	Equals 1 if *UEF* is negative, 0 otherwise. We estimate *EF* based on prior year earnings and cumulative returns during the year. Because the estimation process requires two years of lagged data, the initial estimate of *DOWN* has many missing observations during our sample period. We replace missing values with an indicator of negative forecast revisions. Forecast revision is the difference between the latest forecast (*AF0*) and the earliest forecast for the year (following the announcement of prior year's earnings).
EF	Expected latest forecast (*AF0*).
EPS	I/B/E/S reported actual EPS.
FutureCFO	Operating cash flow (DS1015) summed over three years following the current accounting period and scaled by sales.
GROWTH	The market value of outstanding shares at the end of the year (DSHMV) divided by book value of common equity at the end of the year (DS307), similar to Skinner and Sloan (2002).
INDPROD	Average annual growth in industrial production (using UKCKYWA-UK industrial production index: all production industries) adjusted for inflation (using UKCONPRCF-UK RPI index).
JMBE	Equals 1 if the earnings surprise (*SURP*) is in the interval $0 \leq SURP <$ £0.02, 0 if the earnings surprise is in the interval $-$£0.02 $\leq SURP < 0$.
JUSTMET	Equals 1 if the earnings surprise is from £0.00 to £0.02 per share, non-recurring items are income-increasing and the earnings surprise minus total non-recurring items per share is negative, 0 otherwise.
LARGER	Equals 1 for firms in the highest three quintiles of lagged market capitalisation each year, 0 otherwise.
LIT	Equals 1 if the firm belongs to a high risk industry (biotechnology, computers, electronics and retail), 0 otherwise (see Matsumoto, 2002). High risk industries are Datastream Level 6 BIOTC, CMPSV, INTNT, SOFTW, ELETR, DSCST, ERETL, HARDL, MULTI, SOFTG.
MBE	Equals 1 if the earnings surprise (*SURP*) is zero or positive, 0 otherwise. *SURP* is the difference between I/B/E/S actual EPS and the latest forecast for the year made prior to the earnings announcement date (*AFO*). In line with Bartov et al. (2002), we choose the latest forecast to precede the earnings release date by at least three days to ensure knowledge of the actual earnings figure does not contaminate the forecast.

Appendix A
Definition of variables *(continued)*

Variable	*Definition*
NEG_ΔSALES	Equals 1 if Δ*SALES* is negative, 0 otherwise.
NOEI	Non-operating exceptional items adjusted for tax and minority interest (DS1083 – DS1094 – DS1097) and scaled by sales. DS1083 is total non-operating exceptional items and includes profits or losses on the sale or termination of operations, costs of fundamental reorganisations or restructuring and profits or losses on the sale of fixed assets; DS1094 is tax on non-operating exceptional items; and DS1097 is the minority interest on non-operating exceptional items. Datastream records exceptional and extraordinary items as negative when they are costs or losses and positive when they are revenues or gains. To capture the income-increasing (decreasing) effect of removing negative (positive) items, we multiply *NOEI* by –1.
ONRI	Other non-recurring items calculated as the difference between *TNRI* and *NOEI*.
POSAWCA	Equals 1 if AWCA is positive, 0 otherwise. Abnormal working capital accruals is estimated using the cross-sectional modified Jones model including lagged return on assets (Kothari, Leone and Wasley, 2005), deleting industry–year combinations with less than six observations. We calculate working capital accruals (WCAs) directly from the cash flow statement as change in debtors (DS448), plus change in inventory (DS444), minus change in creditors (DS417) and minus other changes in working capital (DS1012). By deriving WCA from the cash flow statement, we avoid the potential measurement error in accruals derived from the balance sheet when non-operating events such as mergers, acquisitions and divestitures occur (Collins and Hribar, 2002).
POSΔEARN	Equals 1 if annual change in I/B/E/S actual EPS is positive, 0 otherwise.
PROFIT	Equals 1 if I/B/E/S actual EPS is positive in the current accounting period, 0 otherwise.
Δ*REC*	Change in accounts receivable (DS448).
Δ*REV*	Change in revenue (DS104).
ROA	Earnings before interest, tax, depreciation and amortisation (DS1502) over total assets (DS392).
Δ*SALES*	Change in sales (DS104).
SIZE	Decile portfolios formed each year by sorting observations into 10 groups based on lagged market value of equity (0 is the lowest, 9 the highest decile).
Small ONRI	Other non-recurring items (*ONRI*) are less than median *ONRI* for firms with positive *ONRI*.
Small TNRI	Total non-recurring items (*TNRI*) are less than median *TNRI* for firms with positive *TNRI*.
TNRI	Total non-recurring items calculated as the difference between *CE* and net income (DS1087) scaled by sales.
UΔCE	Unexpected change in core earnings scaled by sales.
UCE	Unexpected core earnings scaled by sales.
UEF	Unexpected latest analyst forecast (*AF0 – EF*).
VREARN	Decile portfolios formed each year by sorting R^2s from industry (Datastream Level 6) specific regressions of excess returns (cumulated from the month following the year *t*–1 earnings announcement to the month of the year *t* earnings announcement) on annual change in I/B/E/S actual EPS. Excess returns are firm returns less market returns using the FTSE All Shares Index. Returns are from the LSPD. We assign the value of 0 to firms in the smallest decile through to 9 for firms in the largest decile.
WCA	Working capital accruals scaled by sales.

Appendix B
Results on earnings forecast guidance using the initial estimate of *DOWN*

Panel A: Contingency tables classifying observations based on (1) an indicator of meeting analyst forecasts (*MBE*) or of just meeting analyst forecasts (*JMBE*); and (2) an indicator of downward-guided analyst forecasts (*DOWN*).

	DOWN = 0	*DOWN* = 1		*DOWN* = 0	*DOWN* = 1
MBE = 0	883 (45.61%)	702 (34.53%)	JMBE = 0	530 (38.91%)	440 (31.29%)
MBE = 1	1,053 (54.39%)	1,331 (65.47%)	JMBE = 1	832 (61.09%)	966 (68.71%)
Total	1,936	2,033		1,362	1,406
	$\chi^2 = 50.75$ $p = <0.001$			$\chi^2 = 17.64$ $p = <0.001$	

Panel B: Logit analysis of the probability of meeting analyst forecasts (*MBE* = 1, *JMBE* = 1) as a function of indicators of positive abnormal working capital accruals (*POSAWCA*) and of downward-guided analyst forecasts (*DOWN*) and a series of incentives and controls.

		MBE		***JMBE***	
Variable	Predicted sign	Coefficient (z-stat)	Marginal effect	Coefficient (z-stat)	Marginal effect
Intercept		–2.178*** (–9.24)		–0.930*** (–3.01)	
POSAWCA	?	–0.204*** (–2.86)	–0.049	–0.118 (–1.43)	–0.027
DOWN	+	0.856*** (11.10)	0.201	0.610*** (6.73)	0.136
PROFIT	+	1.206*** (7.77)	0.293	0.262 (1.13)	0.061
POSΔEARN	+	1.365*** (17.12)	0.321	0.997*** (10.55)	0.230
VREARN	+	0.018 (1.06)	0.004	0.004 (0.38)	0.001
GROWTH	+	0.003 (0.36)	0.001	0.005 (0.48)	0.001
LIT	+	–0.143 (–0.14)	–0.034	0.627 (0.60)	0.130
INDPROD	+	6.647*** (3.75)	1.577	3.806* (1.70)	0.854
SIZE	+	0.007 (0.57)	0.002	0.030* (1.85)	0.007
MBE_{t-1}	+	0.346*** (4.65)	0.083	0.318*** (3.60)	0.072
Industry dummies		Yes		Yes	

Appendix B
Results on earnings forecast guidance using the initial estimate of *DOWN* *(continued)*

Panel B continued: diagnostic statistics

	MBE	***JMBE***
Log likelihood	–2,343.09	–1,688.20
Chi-square	540.88	191.57
p-value	<0.001	<0.001
Correctly classified	69.44%	67.31%
No. of observations:		
Meet	2,384	1,798
Did not meet	1,585	970
Total	3,969	2,768

*/**/*** indicate significance at 10%/5%/1% (two-tailed). z-statistics in parentheses are based on White standard errors.
The sample consists of 3,969 observations during the period 1995–2002 for 937 UK firms meeting the sample selection criteria and having available data for *DOWN*. *DOWN* equals 1 if the unexpected part of the latest forecast for the year made prior to the earnings announcement date is negative, 0 otherwise. We estimate the expected part of the forecast based on prior-year earnings and cumulative returns during the year. Appendix A defines the remaining variables. All observations outside the interval –£0.02 ≤ *SURP* < £0.02 are deleted when *JMBE* is used, resulting in 868 firms and 2,768 observations. *SURP* is the earnings surprise measured as the difference between I/B/E/S actual EPS and the latest analyst forecast made prior to the earnings announcement date.

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